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THE RELATIONSHIP BETWEEN ACADEMIC ACHIEVEMENT  
AND THE ORGANIZATIONAL CLIMATE OF SCHOOLS

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES  
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FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled, "The Relationship Between Academic Achievement and the Organizational Climate of Schools," submitted by Donald E. Millar in partial fulfillment of the requirements for the degree of Master of Education.





## ABSTRACT

The study was designed to investigate the relationship between the Organizational Climate of schools and the academic achievement of their students with the effect of academic ability and social class held constant.

The sample comprised the principals, teachers, and grade nine students of eight schools in a large urban school system. Information derived from 1961 Census Tracts indicated that the student population was representative of the broad middle-class stratum of the urban community. Measures of academic ability and achievement were derived from results obtained on the 1964 Grade Nine Departmental Examinations. The instrument used to collect data relative to the climate of schools was the Halpin and Croft Organizational Climate Description Questionnaire (OCDQ).

It was hypothesized that school achievement would not be related to (1) the Organizational Climate of a school and (2) the subtest components of the OCDQ. Analysis of variance treatment of the achievement and OCDQ data supported both of these hypotheses. The arranging of schools in meaningful OCDQ Climate and subtest groups did not result in statistically significant differences in group achievement. Spearman's Coefficient of Rank Correlation was also used to test



the hypotheses. Although no significant correlation was observed between achievement and OCDQ Climate classifications, achievement was correlated in a statistically significant way with two of the OCDQ subtests. The achievement-Intimacy correlation of  $+.667$  and the achievement-Aloofness correlation of  $-.690$  were significant at the  $.05$  level. For the schools in this sample higher levels of school achievement were associated with higher levels of Intimacy among staff members and with lower levels of Aloofness on the part of the principal. These findings should be regarded with caution in view of the ambiguity of the results.

On the basis of the analysis of the data, the investigator concluded that the OCDQ Climate Classifications were neither predictors of, nor correlated with, aggregate-school-achievement scores. It is acknowledged that such factors as principal and teacher qualifications, training, and tenure in their present school could confound these results. However, the presence of significant correlations between the achievement criterion and the Intimacy and Aloofness subtests, respectively, suggests that a concern for human relations on the part of a school principal may have an effect on organizational goals related to student achievement.





## ACKNOWLEDGEMENTS

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## CHAPTER I

### PROBLEMS AND DEFINITIONS OF TERMS

#### I. INTRODUCTION

Schools are institutions designed to produce changes in children; changes in attitudes, behavior, knowledge, and skills. Frequently, on the basis of the latter two, changes in knowledge and skills, the effectiveness of the school is judged. Society places emphasis upon the acquisition of knowledge and skills and such acquisition is amenable to direct and objective measurement and testing.

The purpose of this study is to test the hypothesis that relationships exist between certain social characteristics of school staffs and the academic achievement of their students. It is recognized that such factors as student ability, socio-economic status of the schools' patrons, and the quality of instruction influence academic achievement. A matter of particular concern is the fact that real differences in achievement do exist among the pupils of schools which appear to be quite similar with regard to the above factors. Therefore, there is reason to suspect that such differences in academic achievement may be attributed to factors peculiar to individual schools. In other words, there





may be factors internal to each school, factors related to the organizational structure, to group relations, and to the administrative leadership which influence the effectiveness of a school in attaining academic goals.

## II. NEED FOR THE STUDY

Feldvebel has observed that school systems are very complex structures operating under a variety of organizational schemes and having different directional thrusts.<sup>1</sup> He notes that the social or organizational climates resulting from this kind of structuring may be significantly related to the motivational level within the organization and consequently to the achievement level of students in the system.

If one accepts the validity of academic achievement as a measure of school effectiveness, there is ample evidence to substantiate the need for a study which seeks to investigate the relationship between the social characteristics of a school organization and academic achievement. This evidence is noted in the related literature in Chapter II.

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<sup>1</sup>Alexander M. Feldvebel, "The Relationship Between the Socio-Economic Status of the Schools' Patrons, Organizational Climate in the School, and Pupil Achievement Level," (unpublished Doctoral dissertation, The University of Chicago, Chicago, 1964), p. 6.





### III. THE GENERAL PROBLEM

The problem involved a study of the relationships which exist between the academic achievement of students on Grade Nine Departmental Examinations and the concept of organizational climate as measured by the Organizational Climate Description Questionnaire (OCDQ). Information relevant to the OCDQ is recorded in the definition of terms, Chapter I, the related literature, Chapter II, the design and limitations, Chapter III.

Specifically, the study sought to establish whether climates characterized by higher levels of staff satisfaction derived from task-accomplishment and from social relationships within the school environment would be related to higher levels of achievement with the effect of social class and academic ability held constant and, conversely, whether lower levels on pupil achievement would be associated with climates characterized by lower levels of staff satisfaction derived from task-accomplishment and from social relationships. The study also investigated relationships between student achievement and the eight subtests of the OCDQ.



#### IV. DEFINITIONS

Academic Achievement. Academic achievement was the measure of student attainment on the 1964 Grade Nine Department of Education Examinations based upon the transmuted aggregate scores in the subjects of Language, Literature, Mathematics, Reading, Science, and Social Studies.

Academic Ability. Academic ability was the measure of student ability on the Cooperative School and College Ability Tests (SCAT) administered in conjunction with the 1964 Alberta Department of Education Grade Nine Examinations.

Staff. The staff of a school comprised the principal and full-time teachers of the junior high school section of school.

#### Definitions of the Eight Subtests of the Organizational Climate Description Questionnaire<sup>2</sup>

Disengagement. Disengagement refers to the degree to which the teachers in a school are not behaving as a cohesive group in a task-oriented situation.

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<sup>2</sup>The following statements are taken from the report, Andrew W. Halpin and Don B. Croft, The Organizational Climate of Schools (Chicago: Midwest Administration Center, 1963), pp. 29-32.





Hindrance. Hindrance refers to the extent to which the teachers feel themselves burdened with routine duties and busy-work which interfere with the job of teaching.

Esprit. Esprit refers to the extent to which teachers feel that their social needs are being satisfied in the school environment as well as the feeling of accomplishment in their job.

Intimacy. Intimacy refers to the teachers' enjoyment of friendly social relations with each other. This subtest measures a social-needs satisfaction which is not necessarily associated with task-accomplishment.

Aloofness. Aloofness refers to the extent to which behavior by the principal is formal and impersonal.

Production Emphasis. Production Emphasis refers to the extent to which behavior of the principal is characterized by close supervision of his staff. In the extreme he is directive and task-oriented.

Thrust. Thrust refers to the extent to which behavior of the principal is characterized by the hard-working example he sets in the task-oriented situation.





Consideration. Consideration refers to the extent to which behavior by the principal is characterized by his concern for the personal well-being of his teachers.

### Definition of the Concept Organizational Climate<sup>3</sup>

Organizational Climate. Organizational climate refers to that component of school organization which is determined by the social interaction among the teachers of the school and the interaction between this group as a group and the principal.

### Definition of the Six Prototypic Organizational Climates<sup>4</sup>

Open Climate. The Open Climate is characterized by an effective balance between task accomplishment and social-needs satisfaction. The principal is successful in integrating the demands of the institution with the demands of the individual staff member. The Open Climate is characterized further by (a) above-the-mean subtest scores on Esprit, Thrust, and Consideration, (b) below-the-mean subtest scores on Disengagement, Hindrance, Aloofness and Production Emphasis, and (c) a mean subtest score on Intimacy.

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<sup>3</sup>Ibid., p. 7.

<sup>4</sup>Ibid., pp. 59-67.



Autonomous Climate. The Autonomous Climate is characterized by the freedom which the principal gives the teachers to solve their problems related to teaching as well as to provide for the satisfaction of their social-needs. Subtest characteristics of the Autonomous Climate are (a) above-the-mean scores on Esprit, Intimacy, Aloofness, and Thrust, (b) below-the-mean subtest scores on Disengagement, Hindrance, and Production Emphasis, and (c) a mean score on Consideration.

Controlled Climate. The Controlled Climate is characterized by a press for achievement at the expense of social-needs satisfaction. Subtest characteristics of the Controlled Climate are (a) above-the-mean subtest scores on Hindrance, Esprit, Aloofness, Production Emphasis, and Thrust, (b) below-the-mean scores on Disengagement, Intimacy and Consideration.

Familiar Climate. The Familiar Climate is characterized by high social-needs satisfaction with little emphasis on task accomplishment. Subtest characteristics of the Familiar Climate are (a) above-the-mean subtest scores on Disengagement, Intimacy, Thrust, and Consideration, (b) below-the-mean scores on Hindrance, Aloofness, and Production Emphasis, and (c) a mean subtest score on Esprit.





Paternal Climate. The Paternal Climate is characterized by the ineffective attempts of the principal to control the teachers in addition to satisfying their social needs. Subtest characteristics of the Paternal Climate are (a) above-the-mean scores on Disengagement, Production Emphasis, Thrust, and Consideration, and (b) below-the-mean scores on Hindrance, Esprit, Intimacy, and Aloofness.

Closed Climate. The Closed Climate is characterized by a situation in which the group members derive little satisfaction with respect to either task-achievement or social-needs. The principal is ineffective in directing the activities of the teachers and he is not concerned about their personal welfare. Subtest characteristics of the Closed Climate are (a) above-the-mean subtest scores on Disengagement, Hindrance, Intimacy, Aloofness, and Production Emphasis, and (b) below the mean subtest scores on Esprit, Thrust, and Consideration.





## CHAPTER II

### REVIEW OF THE LITERATURE

For many years concern about individual differences among students has been evidenced in such fields as curriculum planning, school organization, grouping practices, and teaching methods. However, individual differences among schools and school systems as they relate to social characteristics have not been a matter of formal inquiry until recently. As Miklos has noted, if there has been an awareness of these differences by school administrators this awareness has not been adequately reflected in the literature.<sup>1</sup>

#### I. ORGANIZATIONAL CLIMATE: THE CONCEPT

Miklos has observed that it is a matter of common experience that the many organizations in which an individual participates differ from each other.<sup>2</sup> He further observed that organizations which are very similar in purposes and objectives have certain discernible differences of which one

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<sup>1</sup>Erwin Miklos, "Organizational Climate: The Concept and the Instrument," (paper read at the Council on School Administration seminar on Organizational Climate of Schools, Edmonton, Alberta, March, 1964), p. 1.

<sup>2</sup>Ibid.



becomes aware, perhaps in an intuitive way, soon after coming in contact with these organizations. Halpin and Croft have said that, when focusing on a school organization, one does not have to be in a particular school for a very long period of time before he has a certain "feeling" that it would or would not be a satisfying place in which to work.<sup>3</sup>

Halpin and Croft have also noted that there appears to be a distinctive quality about an organization, a quality analogous to the personality of an individual.<sup>4</sup> Examining this concept of personality as it relates to an organization, Miklos had this to say:

Personality as a concept or construct enables us to come to grips with the observation that the behaviors of individuals as total human beings differ from each other. As the individual grows and develops he establishes fairly consistent patterns of behavior or fairly consistent reactions to situations which are similar or which he perceives as being similar. When we discuss an individual's personality we refer to this characteristic way of responding to his environment.<sup>5</sup>

Pursuing the analogy, Miklos noted that it has been observed and theorized that organizations, like individuals, are characterized more by stability than change:

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<sup>3</sup>Andrew W. Halpin and Don B. Croft, The Organizational Climate of Schools (Chicago: The Midwest Administration Center, 1963), p. 4.

<sup>4</sup>Ibid.

<sup>5</sup>Miklos, op. cit., p. 2.





That is, as the organization develops it tends toward a steady or homeostatic state in which its internal processes and its relationships with its environment maintain a fair degree of consistency. Now if this is so, and if these steady states differ from organization to organization even if they are of the same type and have the same formal structure, then there is something here which should be described. Argyris, among others, has referred to the characteristics of this homeostatic state as the climate of the organization.<sup>6</sup>

Although Argyris' investigation did not involve the study of school organizations, there is merit in reviewing his findings since they indicate the complex nature of the organizational climate concept. In a study of a bank Argyris was able to identify three behavior variables: (1) The formal variable inherent in the policies, procedures, and positions in the organization; (2) the personal variable or personality factors, including the needs, values, and abilities of the individual; (3) the informal or group variables through which the individual attempts to accommodate his own ends to those of the organization.<sup>7</sup>

Argyris theorizes that one cannot obtain a true picture of "reality," that is the organization, by studying these variables independently. Rather, he suggests, a study

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<sup>6</sup>Ibid., pp. 2-3.

<sup>7</sup>Chris Argyris, "Some Problems in Conceptualizing Organizational Climate: A Case Study of a Bank," Administrative Science Quarterly, II (1957-58), 501-502.





of an organization requires research simultaneously on all three levels of analysis. This simultaneous analysis of the formal, personal, and informal variables creates a fourth variable which he identifies as organizational behavior. The label which he gives to this resultant organizational behavior is "organizational climate."<sup>8</sup>

A somewhat more restricted concept of organizational climate was developed by Cornell. On the basis of his research, Cornell noted that the organizational environment of a school system is real and tangible and has real and tangible effects upon the performance of the school.<sup>9</sup> He states that this organizational environment is determined in large measure by Organizational Climate which he defines in terms of the following variables:

- (1) The extent to which teachers are satisfied with their relationships to the organization.
- (2) The extent to which teachers expect administration to share in decision-making.
- (3) The extent to which teachers feel that they are given responsibility when they participate in policy making.
- (4) The extent to which teachers feel that their contribution to policy making is taken into account in the final decisions.

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<sup>8</sup> Ibid., p. 502.

<sup>9</sup> Francis G. Cornell, "Socially Perceptive Administration," Phi Delta Kappan, XXXVI (March, 1955), 220.



- (5) The extent to which teachers interact directly with administrative personnel with respect to general school problems.<sup>10</sup>

Although Cornell does not elaborate upon the teacher morale factor other than to define it as a "measure of satisfaction of teachers with their relationships to the organization," it is plausible to assume that the other components of organizational climate, (2), (3), (4), and (5) are involved in the measure of this same morale variable.

On the basis of his research, Cornell found that participation in policy-making was predictive of teacher classroom behavior and that the most direct measure of organizational climate was the morale variable.<sup>11</sup>

While Cornell's investigation stresses the relationship between organizational climate and school performance, it provided evidence that some teachers perform effectively regardless of the organizational climate.<sup>12</sup>

The concept of organizational climate formulated by Halpin and Croft has particular significance to this study since it is in the context of their work in this area that the present investigation is based. The research conducted

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<sup>10</sup>Ibid.

<sup>11</sup>Ibid.

<sup>12</sup>Ibid.





by Halpin and Croft will be reviewed in some detail.<sup>13</sup>

As a basis of conceptualizing organizational climate, the investigators examined recent literature on leadership and group behavior and noted the different ways of classifying the attributes of each. According to the frequency of occurrence they were able to place the various taxonomies into three classifications.<sup>14</sup>

In the first of these classifications the focus was upon the source from which interactions originated. They noted that group interactions were often categorized under four headings:

- (1) Interactions determined primarily by the leader's behavior.
- (2) Behavior attributable to characteristics of the group qua group.
- (3) Interactions determined by procedures or by actions of an executive in a position hierarchically superior to the leader himself (i.e., the superintendent and the Board of Education limit the principal's range of decisions).
- (4) Interactions determined primarily by the behavior of individuals qua individuals, and hence associated directly with the "personality" assets and liabilities of the individual.

The second of these classifications was evaluative in

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<sup>13</sup> Halpin and Croft, op. cit.

<sup>14</sup> Ibid., pp. 16-17.





that it pertained to the "effectiveness" or "ineffectiveness" of the organization. They noted four theoretical types of organizations:

- (1) The "Effective" organization.
- (2) The Social-needs oriented organization.
- (3) The Task-oriented organization.
- (4) The "Ineffective" organization.

The third basis for classifying group interactions concerned the relationship between the social needs of the individual and the social control imposed upon him as a member of a group.

In formulating their own concepts about organizational climate, Halpin and Croft took into consideration these three ways of looking at a group; namely, (1) the source from which social interactions stem, (2) theory concerning the "effectiveness" of an organization, (3) the relationship between the social needs of the individual and the social control imposed upon him as a member of the group.

In the context of the work by Halpin and Croft pertaining to the development of the Organizational Climate Description Questionnaire, organizational climate refers to the social component of a school organization; the social interaction among the teachers of a school and the interaction of this group with the principal. Figuratively speaking,



"Organizational Climate can be construed as the organizational 'personality' of a school; ... 'personality' is to the individual what 'climate' is to the organization."<sup>15</sup>

## II. STUDIES OF CLIMATE AND ACADEMIC ACHIEVEMENT

Two studies which endeavoured to relate the concept of organizational climate to academic achievement were completed after the data for the present study had been analysed. The findings of these studies will be reported along with selected studies which have as their focus the relationship between pupil achievement and behavioral characteristics of principals and teacher groups.

A study by Feldvebel investigated the relationship among the variables of organizational climate, pupil achievement, and social class.<sup>16</sup> The sample was composed of thirty elementary schools in the suburban Chicago area. For each of the schools in the sample, measures of the organizational climate (and component subtests), pupil achievement, and social class were derived from staff responses to the OCDQ,

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<sup>15</sup> Ibid., p. 1.

<sup>16</sup> Alexander M. Feldvebel, "The Relationship Between Socio-Economic Status of the Schools' Patrons, Organizational Climate in the School, and Pupil Achievement Level" (unpublished Doctoral dissertation, The University of Chicago, Chicago, 1964).







pupil achievement on the intermediate battery of the Stanford Achievement Test at the fifth grade level, and responses to the Warner Index of Social Class.

Feldvebel found no statistically significant relationship between the global concept of organizational climate and either the social class or achievement variables. However, certain subtests of the OCDQ did correlate in a statistically significant way to these variables.

The Production Emphasis subtest was related to socio-economic status (+505) as was Consideration (-404). As socio-economic status rose in rank Production Emphasis decreased and Consideration increased in the school climate.<sup>17</sup> The directions of these relations is explained by the fact that the investigator ranked socio-economic status in an order which was the inverse of that used in ranking Production Emphasis and Consideration.<sup>18</sup>

The investigator also found that these two subtests of the OCDQ, Production Emphasis and Consideration, were related to pupil achievement. The respective correlations were -.399 and +.391.<sup>19</sup> Feldvebel stressed the need for caution in

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<sup>17</sup> Ibid., p. 81.

<sup>18</sup> Ibid., p. 64.

<sup>19</sup> Ibid., p. 84.



interpreting these correlations as predictive of pupil achievement since they were derived independent of other such variables which appeared to affect the mean achievement level.

In this regard, the investigator noted that about 74 per cent of the variance in mean pupil achievement, with the effect of mental ability held constant, could be attributed to the combined effects of socio-economic class, expenditure per pupil, transiency, and the OCDQ subtest measures of Consideration and Production Emphasis. He observed that when the effect of socio-economic status was held constant, the variance due to the other four variables was reduced from 1.000 to .380. When the combined effects of socio-economic status, expenditure per pupil, and transiency were held constant, the variance in achievement due to Consideration and Production Emphasis was reduced to .271.<sup>20</sup> The most significant result of this analysis indicates the important role played by socio-economic status as a predictor of pupil achievement.

Although the results of Feldvebel's study indicates that there is no significant relationship between the global concept of Organizational Climate and pupil achievement, the fact that there exists a statistically significant

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<sup>20</sup> Ibid.





association between pupil achievement and the Production Emphasis and Consideration subtests of the OCDQ serves to reinforce a belief in the importance of the principal's leadership role in organizational goal attainments. Specifically, the results of this investigation indicate that higher levels of pupil achievement are found in schools where principal behavior is characterized by (1) a de-emphasis on directive and task-oriented supervision and (2) a concern for the personal well-being of his teachers.

A second study which sought to relate the concept of Organizational Climate to student achievement was included in an investigation by Andrews.<sup>21</sup> This study involved a sample of 95 Alberta schools in which 6,135 students wrote 1964 Grade Nine Departmental Examinations. In each of the schools the principal and a random sample of nine teachers responded to the OCDQ. For each school a mean achievement score based on 1964 Grade Nine Departmental Examinations was derived. An attempt was made in this study to control the effect of academic ability on achievement; measures of academic ability were based on SCAT scores attained by the students in the sample.

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<sup>21</sup>John M. Andrews, "Some Validity Studies of the OCDQ," The CSA Bulletin, IV (July, 1965), 4-20.





Andrews' study supports the findings of Feldvebel in that no significant relationship was found between the Halpin and Croft Climate classifications and student achievement. The only significant relationship emerging from this investigation was a positive correlation of .29 between achievement and the Intimacy subtest.<sup>22</sup>

Andrews noted that this strong relationship between the Intimacy subtest and achievement was surprising, though credible. On the basis of his research, he concluded that teachers appear to be motivated more by the group than by principal behavior. He observed that the absence of relationships between achievement and the Thrust and Production Emphasis variables might indicate that these variables pertain more to self or profession-instituted goals than to organizational goals.

In analysing the data from their research, Halpin and Croft found that the subtest which measures Esprit was the best single indicator of the Organizational Climate in a school system.<sup>23</sup> Esprit, defined in Chapter I, (supra, p. 5), measures the quality of an organization more commonly referred to as morale. Reported in the literature is a prolific

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<sup>22</sup>Ibid., p. 13.

<sup>23</sup>Halpin and Croft, op. cit., p. 60.



number of studies which have as their focal point the relationship between morale and productivity. However, few of these studies have been undertaken in education; that is, few studies have investigated the relationship between morale and productivity as measured by pupil achievement.

Anderson conducted a study of teacher morale and its relation to student achievement at the secondary school level.<sup>24</sup> On the basis of standardized achievement tests (Iowa Tests of Educational Development), he selected a sample of twenty schools. The mean achievement level of students attending ten of these schools was seventy-five or higher and that of students attending the remaining ten schools was thirty or lower. To the teaching staff of each school a morale scale was administered. This scale was constructed on the basis of items generally considered as reflecting morale. The difference between groups was found to be significant at the five per cent level. While the investigator drew some sweeping conclusions, the possibility that such an association exists between morale and school productivity is worthy of further investigation.

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<sup>24</sup>Lester W. Anderson, "Teacher Morale and Student Achievement," Journal of Educational Research, XLVI (May, 1955), 693-698.







The results of a study by Congreve were in direct contradiction to the relationship between morale and the achievement found by Anderson reported above.<sup>25</sup> Congreve's investigation involved the case study of two schools, and while acceptance of his findings are limited by the smallness of the sample, this concluding statement cannot be entirely ignored:

Teacher effectiveness does not appear to be greatly affected by the nature of the informal organization of the school. Unlike industrial organizations, where a direct relationship has been found to exist between the informal organization and productivity, no such relationship seems to exist in the school.<sup>26</sup>

Keeler investigated the relationship between productivity as measured by student achievement and a number of social factors present in school organizations.<sup>27</sup> Insight into the facets of social climate of the forty-six schools in the sample was obtained by the use of the Leader Behavior Description Questionnaire (LBDQ) and a morale scale developed by the investigator. Productivity was measured by student

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<sup>25</sup>W.J. Congreve, "Administrative Behavior and Staff Relations," Administrator's Notebook, IV (October, 1957).

<sup>26</sup>Ibid.

<sup>27</sup>B.T. Keeler, "Dimensions of the Leader Behavior of Principals Staff Morale, and Productivity," (unpublished Doctoral dissertation, University of Alberta, 1961).



achievement on grade nine Departmental Examinations with the effect of intelligence and social class held constant.

The investigator found a highly significant correlation between the LBDQ dimensions and productivity. Productivity was related to both the Consideration (behavior that reflects friendship, mutual trust, respect, and warmth in the relationship between the leader and group members) and Initiating Structure (behavior of a leader in outlining his relationship with the group and in trying to set up patterns of organization and channels of communications within the group) variables. The respective correlation coefficients were  $+.416$  and  $+.420$ , both significant at the  $.01$  level of confidence.

Keeler also found significant correlations between measures of morale and productivity. Productivity was related to both the Cohensiveness (the sum of forces tending to draw the members of the group together minus the sum of forces tending to draw the members apart) and Induction (goal orientation) variables. The respective correlation coefficients were  $.279$  and  $.300$ , both significant at the  $.05$  level of confidence.

On the basis of his research, Keeler concluded that leader behavior and staff morale are significantly related to school productivity as measured by student achievement.





The findings of studies cited in this section support the thesis that relationships exist between student achievement level and certain social components of school organizations. The presence of a relationship between achievement and behavioral characteristics of principals was noted by Feldvebal. Keeler found that student achievement was related both to principal and teacher group behavior. Andrews and Anderson found relationships between the achievement variable and teacher characteristics. The review of literature revealed only one study, the investigation by Congreve, which refuted the presence of a relationship between pupil achievement and the social characteristics of school organizations.

### III. OTHER CLIMATE STUDIES

Cited in the previous section were studies conducted by Feldvebel and Andrews, respectively, which utilized the OCDQ to investigate the relationship between pupil achievement and Organizational Climate. Of recent origin are several studies which have used the OCDQ for other purposes.

Harvey investigated the relationship between OCDQ scores and the classroom behavior of teachers.<sup>28</sup> A study by

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<sup>28</sup>R.F.E. Harvey, "School Organizational Climate and Teacher Classroom Behavior," (unpublished Doctoral dissertation, University of Alberta, 1965).





Lupini studied the relationship between OCDQ scores and principal-teacher and inter-teacher congruence in values.<sup>29</sup> An investigation conducted by Pyra related OCDQ scores to pupils' attitudes to their school environment and to school personnel.<sup>30</sup> Another study which indicates the diverse use of the OCDQ was conducted by Plaxton who investigated the relationship between OCDQ scores and principal personality.<sup>31</sup>

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<sup>29</sup>D. Lupini, "A Study of the Relation of Differential Values to Administrative and Social Interactions," (unpublished Doctoral dissertation, University of Alberta, 1965).

<sup>30</sup>J.F. Pyra, "Principal-Teacher Relationship as Measured by the OCDQ and Its Relationship with Attitudes and Other Variables of Grade Ten Students," (unpublished Master's thesis, University of Alberta, 1965).

<sup>31</sup>R.P. Plaxton, "Relationship Between Principals' Personality and the Organizational Climate of Their Schools," (unpublished Master's thesis, University of Alberta, 1965).



## CHAPTER III

### DESIGN OF THE STUDY

This study attempted to investigate the relationship between the Organizational Climate of schools and the academic achievement of their students with the effect of student ability and social class held constant. This chapter will provide a statement of the hypotheses to be tested, a description of the procedures used in the collection of data, a description of the methods to be employed for analyzing the data, and the limitations of the study.

#### I. HYPOTHESES TO BE TESTED

Hypothesis 1. Academic achievement is not related to the Organizational Climate of a school.

Hypothesis 1 will be tested by the following null hypotheses:

H<sub>0</sub> 1.1: There are no statistically significant differences between mean-achievement-scores when schools are classified on the basis of Organizational Climate.

H<sub>0</sub> 1.2: The correlation between mean-achievement-scores and the Organizational Climate of schools is not significantly different from





zero.

Hypothesis 1 used the Halpin and Croft ranking of the six Organizational Climates on an Open to Closed continuum. This ordering of Climates, Open, Autonomous, Controlled, Familiar, Paternal, and Closed roughly parallels a corresponding Esprit subtest score decrease in each of the Climates on the continuum.<sup>1</sup> Thus, higher levels of satisfaction derived from task-accomplishment and social-needs satisfaction (Esprit) may or may not be associated with those Climates located successively closer to the Open end of the Climate continuum. Conversely, lower levels of satisfaction may or may not be associated with those Climates located successively closer to the Closed end of the Climate continuum.

Hypothesis 2. Academic achievement is not related to respective OCDQ subtests.

Hypothesis 2 will be tested by the following null hypothesis:

H<sub>0</sub> 2.1: There are no statistically significant differences in mean-achievement-scores when schools are grouped on the basis of mean scores on the

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<sup>1</sup>Andrew W. Halpin and Don B. Croft, The Organizational Climate of Schools (Chicago: The Midwest Administration Center, 1963), p. 60.



respective OCDQ subtests.

H<sub>0</sub> 2.2: The correlation between mean-achievement-scores and the respective OCDQ subtest mean scores is not significantly different from zero.

## II. COLLECTION OF DATA

In the design of the study it was necessary to take the following steps in order to secure the data necessary to test the hypotheses: (1) definition of the population and derivation of a sample, (2) instrumentation, (3) administration of the instrument, (4) scoring of the instrument, (5) obtaining information relative to student ability, and (6) obtaining information relative to student achievement. This section will deal with these facets of data collection.

### Derivation of the Sample

The sample for this study was drawn from schools in a large urban school system. From this population, schools were selected in accordance with the following criteria: (1) All schools had a minimum of two grade nine classes, which insured a student sample of adequate size; (2) All principals had a minimum of three and one-half days of supervisory time in which they could fulfill their administrative duties; (3) All schools were located in similar socio-economic areas, which





tended to negate the effect of social class on achievement.

Information concerning the number of grade nine classes in schools and principal supervision time was obtained from the offices of the school district. Information relevant to the socio-economic locale of schools, and hence the socio-economic status of the schools' patrons, was derived from selected statistics contained in the 1961 Census Tracts for the City of Edmonton.<sup>2</sup> The statistics employed to determine the socio-economic status of schools' patrons were those pertaining to (1) maximum level of working force education, (2) categories of male occupations, (3) median family wage, and (4) median value of owner occupied dwellings within the grade nine boundary area of each school.

Census tracts are designed to be relatively uniform in area and population, and each is fairly homogeneous with respect to economic and living conditions. The census data available for these statistical purposes are considered to be a valid basis on which to compare social and economic factors within an urban community.<sup>3</sup>

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<sup>2</sup> Dominion Bureau of Statistics, 1961 Census of Canada: Population and Housing Characteristics by Census Tracts: Edmonton, Bulletin CT-21 (Ottawa: The Queen's Printer, 1963).

<sup>3</sup> Ibid., p. 3.



In numerous cases the census tract boundaries were not coterminous with those of grade nine attendance areas and in such cases it was necessary to combine the statistics for as many as three census tracts to insure that an accurate measure of the socio-economic status of each school's patrons was obtained.

In the year 1963-64 there were ninety-nine schools in the Edmonton Public School District. Of this number, seventeen schools contained a minimum of two grade nine classes in addition to satisfying the criterion of a minimum of three and one-half days per week principal supervision time. The criterion of similarity of socio-economic locale was applied to these seventeen schools with the result that the original population was reduced in size to the teachers, principals, and grade nine students of eight schools.

A comparison of the socio-economic locales of the eight schools in the study is found in Table I. An examination of the table reveals that there was (1) a range in the University Training category from 10 to 16 per cent, a difference of 6 per cent; (2) a range of 10, 11, 11, and 3 per cent respectively in the Male Occupations category; (3) a range in the Mean Family Income category from 5,100 to 5,900 dollars, a difference of 800 dollars; (4) a range in the Median Value of Owner Occupied Dwellings from 13,500 to 16,000





dollars, a difference of 2,500 dollars.

TABLE I  
SELECTED SOCIO-ECONOMIC FEATURES OF DISTRICTS  
SURROUNDING SAMPLE SCHOOLS

School	University Training Per Cent*	Male Occupations Per Cent **				Family Income Mean	Owner Occupied Dwellings Median Value
		a	b	c	d		
A	10	22	30	30	7	\$5,100	\$13,500
B	16	29	33	22	4	5,700	14,800
C	13	23	28	30	4	5,600	14,900
D	14	25	34	25	4	5,300	15,200
E	14	21	26	33	6	5,200	14,100
F	15	27	27	29	5	5,500	14,600
G	11	21	23	32	6	5,500	14,100
H	16	31	25	30	4	5,900	16,000

\*Relates those not attending school and with one or more years of university education to total employed labor force.

\*\*Male Occupations are classified in the following manner:

- (a) Managerial, Professional and Technical
- (b) Clerical, Sales, Service, and Recreational
- (c) Craftsmen, Production Process and Related Workers
- (d) Laborers

While certain differences among the measures of socio-economic status of school locales were evident, it was assumed that the magnitude of these differences would not detract from



the thesis that the school population was representative of the broad middle-class strata of the community. Hence, differences in achievement level among schools would not be attributed to the effect of markedly dissimilar socio-economic classes of student population.

### Instrumentation

The instrument used to collect data relative to the climate of schools was Halpin and Croft's Organizational Climate Description Questionnaire (OCDQ).<sup>4</sup> A copy of the OCDQ is included in Appendix A.

The instrument is similar to an attitude index in that the teachers and principals are asked to give their perception of the social situation in their school. The sixty-nine<sup>5</sup> items represent measures of behavior within the organization with a focus on two areas: (a) the teachers as a group and (b) the principal. Building upon this framework, eight dimensions of organizational behavior are described in the questionnaire. Four of these dimensions (Disengagement, Hindrance, Esprit, and Intimacy) are concerned with teacher behavior and four (Aloofness, Production Emphasis, Thrust,

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<sup>4</sup>Halpin and Croft, op. cit. , pp. 122-24.

<sup>5</sup>Only 64 items are scored; five items are buffer items.





and Consideration) tap the characteristic behavior of the principal.

From the manner in which the scores on each of the above mentioned dimensions or subtests are arrayed, one may determine the Organizational Climate which best describes each school in the sample. This procedure will be described in the section on scoring of the instrument.

### Instrument Validity

The question of OCDQ validity has been tested by research projects conducted at the University of Alberta and reported by Andrews.<sup>6</sup> The sample was composed of 165 Alberta schools with five or more teachers. It should be noted that this was not necessarily a random sample.

The OCDQ was administered to the teachers and principals of these schools and auxiliary information was obtained by teacher's responses to the following questions:

- (1) How well satisfied are you with all aspects of your teaching situation in your present school? (enthusiastic to very dissatisfied)
- (2) How effective do you consider your principal to be in performing all the various functions which he should perform? (outstanding to very poor)

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<sup>6</sup> John M. Andrews, "Some Validity Studies of the OCDQ," The CSA Bulletin, IV (July, 1965), 4-20.



- (3) Compared with other schools known to you, how good a job do you judge your school does in educating the students who come to it? (Outstanding to very poor)

Schmidt drew from the original sample a sub-sample of 67 principals who also responded to the Leader Behavior Description Questionnaire.<sup>7</sup> Plaxton, with a sub-sample of 164 principals, investigated the relationship between the OCDQ and the Myers-Briggs Type Indicator.<sup>8</sup>

Reviewing these studies, Andrews concluded that the OCDQ appears to be as valid for other kinds of schools as it is for elementary schools. He also noted that the subtests of the OCDQ provided reasonably valid measures of important aspects of the leadership of the school principal in a perspective of interaction with his staff.

However, in analyzing the data pertaining to the relationship between the overall Climate classifications (Open... Closed) and external criteria, Andrews concluded that these classifications appear to have little meaning. He states that the vagueness of the concept Organizational Climate and of the names of the six types of Climate are regarded as detractions from the validity of the OCDQ.

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<sup>7</sup>Werner G. Schmidt, "Organizational Climate and Leader Behavior," The CSA Bulletin, IV (July, 1965), 40-63.

<sup>8</sup>Robert P. Plaxton, "Principal Personality and School Organizational Climate," The CSA Bulletin, IV (July, 1965), 21-35.







These findings have implications for the present investigation. That the OCDQ appears to have validity for schools other than the elementary indicates that the use of the instrument with junior high school staffs does not represent a misuse of the OCDQ. Further, Andrews' conclusions suggest that more accurate insights into the social aspects of a school organization might be derived from the OCDQ subtest components than from the broad Climate classifications.

#### Administration of the Instrument

During the month of January, 1964, the investigator contacted the principal of each of the eight schools involved in the study to explain the nature of the project. All principals provided an opportunity for the investigator to meet with their respective staffs and to administer the OCDQ. These meetings were scheduled during the month of February, 1964.

Each staff was told that this research project was an attempt to determine the relationship between school achievement and certain social characteristics of the school organization. The OCDQ was described as an instrument which would enable the investigator to plot a profile of the interpersonal relations which characterize their school. The principals and teachers were assured of anonymity in the study and



were asked to be frank in giving their perceptions of the school climate.

### Scoring of the Instrument

The sixty-four items on the OCDQ are scored on a point system ranging from 6 to 9 points, with 6 points for an item marked "Rarely occurs" and increasing to 9 points for "Very frequently occurs." Six items are so worded that they are scored inversely. All scoring was carried out in accordance with the procedures developed by Halpin and Croft.<sup>9</sup>

The raw scores for each subtest are obtained by summing the scores received by each respondent on all of the items within the subtest, dividing this sum by the number of items and rounding off this quotient to a two-digit number. The eight subtest scores obtained in this manner are the "raw" scores for the individual respondents. To obtain the raw subtest scores for each school the investigator computed the average, subtest by subtest, of the scores of all the respondents in the school.

It was then necessary to standardize the scores normatively with respect to the means and standard deviations for the total sample's scores on each subtest.

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<sup>9</sup>Halpin and Croft, op. cit., pp. 174-178.





To standardize the raw scores for each subtest it was necessary to enter the appropriate mean and standard deviation in the following standardization formula and solve for  $x_s$  the standard score with respect to a mean of 50 and a standard deviation of 10:

$$x_s = \frac{10}{s_o} x_o - \frac{10}{s_o} (M - 50)$$

$x_s$  = standard score

$M$  = sample mean

$s_o$  = sample standard deviation

$x_o$  = Subtest raw score

The mean and the standard deviation for each subtest were entered in turn until all eight subtest scores were converted to standard scores. After completing this normative standardization it was then necessary to compute the mean and the standard deviation for each school's standardized subtest scores. Then, using the same formula as noted above, the mean and standard deviation for each school were inserted and the formula solved for each of the subtest scores. When these figures had been computed for all eight subtest scores, the scores were standardized ipsatively. This completed the normative and ipsative standardization procedure necessary for deriving the school profile scores.

The authors of the OCDQ explain that the double standardization technique enables the examiner to study the



relationship between the scores on the subtests with the differences among the means of the subtests scores for each school in the sample held statistically constant. Through this procedure, the inter-school variance and the intra-school variance are not confounded.

Appendix B contains the prototypic profiles for the six organizational climates that were conceptualized by Halpin and Croft. To determine which of these six climate profiles is most similar to a given school's profile, it was necessary to compare the school profile with each of the six prototypic profiles, in turn, and in each instance derive a profile similarity score. To do this, the absolute difference between the scores on each subtest were computed and summed for each of the six prototypic profiles. Thus, a profile similarity score was computed for each prototypic profile. The prototype yielding the smallest sum indicated which of the six climates best characterized a particular school.

#### Information on Student Ability

Academic ability has been defined as the measure of student ability measured by the Cooperative School and College Ability Tests (SCAT) administered in conjunction with the 1964 Alberta Department of Education Grade Nine





Examinations. Although this instrument is not an intelligence test, it has been frequently employed to control the academic ability variable.

An attempt has been made in this study to control the effect of academic ability on achievement. Data relative to the academic ability of the grade nine students attending the eight schools were obtained from the school district office. These data were available in percentile form, and for each school in the sample a mean percentile score was computed. These scores are shown in Table II.

TABLE II  
COMPARISON OF GRADE NINE STUDENT SCAT  
SCORES IN THE EIGHT SCHOOLS

School	Number of Students*	Mean Percentile Score
A	226	55.15
B	145	65.03
C	166	61.98
D	76	57.83
E	133	60.00
F	163	56.96
G	127	62.87
H	214	57.85

\*Refers to the number of students in Grade Nine and writing Departmental Examinations.



An examination of Table II reveals that the mean percentile range in academic ability among schools was from 65.03 (School B) to 55.15 (School A), a range of 9.88 percentile points.

A method of negating the effect of academic ability has been employed by Truckey.<sup>10</sup> This method involved the arbitrary selection of a mean score ( $M_o$ ) within the sample mean percentile scores and the adjustment of each of the sample means to coincide with  $M_o$ . For each school with a mean percentile score above  $M_o$ , a sufficient number of below  $M_o$  scores were withdrawn from the sample to make the school mean equivalent to the  $M_o$  score. This was accomplished by a random selection process. The inverse procedure was followed for those schools with a mean percentile score below  $M_o$ . Table III contains this data.

Table III indicates that it was necessary to decrease the size of the sample from 1,250 to 1,113 students (a decrease of 137) to insure homogeneity of academic ability. The largest proportion of scores withdrawn from the original sample were taken from School B, approximately 23 per cent.

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<sup>10</sup>L.A. Truckey, "Comparison of Achievement of Grade Nine Students in Selected Single Grade and Multi-Grade Classes in Alberta," (unpublished Master's thesis, University of Alberta, 1964), p. 28.





TABLE III

## MEAN OF GROUPS AFTER CASTING OUT CASES

School	Original Sample	Cases Withdrawn	Final Sample	Adjusted Mean
A	226	33	193	60.00
B	145	34	111	60.00
C	166	10	156	60.00
D	76	6	70	60.00
E	133	0	133	60.00
F	163	21	142	60.00
G	127	15	112	60.00
H	214	18	196	60.00
Total	1250	137	1113	

The adjusted mean percentile score of academic ability for each school was 60.00

#### Information Relative to Student Achievement

The measure of achievement was the transmuted aggregate score on examinations which are set annually by the Alberta Department of Education and written by all grade nine students in the province. The results of the examinations in five subject areas (Language, Literature, Mathematics, Reading, Science, and Social Studies) were scaled and the scaled



scores were summed for each student. The total possible aggregate score was 500 with 400 marks being equally apportioned to Literature, Mathematics, Science and Reading and 50 marks each to Language and Social Studies. The examinations have been accepted by educational authorities in the province as meeting a satisfactory level of content validity.

The aggregate scores for the 1,113 students comprising this part of the sample were made available to the investigator by the Alberta Department of Education.

### III. METHOD FOR ANALYZING THE DATA

The data gathered in this study were analyzed in a descriptive and statistical manner. Since the sample was limited to eight schools, an opportunity was afforded to examine in depth the type of social interaction which occurred in each of these organizations. This descriptive analysis of the Climate data, together with information concerning the biographical characteristics of each school's staff, will be found in Chapter IV, analysis of data.

The testing of the hypotheses involved the application of both parametric and nonparametric statistical procedures. The parametric statistic employed was analysis of variance, one-way classification; the nonparametric statistic was Spearman's coefficient of rank correlation.





The analysis of variance technique served to test the significance between achievement means based on the arrangement of schools in meaningful Climate and subtest groups respectively.<sup>11</sup>

A number of independent tests were undertaken with the aforementioned Climate and subtest groups serving as the respective independent variables and mean group achievement as the dependent variable. The analysis of variance tests were computer programmed.

A second method of testing the hypotheses involved the calculation of rank correlation coefficients relating school achievement scores to the OCDQ Climate and subtest data. The statistic used was Spearman's coefficient of rank correlation.<sup>12</sup> The rank correlation method tested the significance of association between paired ranks; it did not assume statistically significant differences in mean achievement.

#### IV. LIMITATIONS OF THE STUDY

A first limitation of the study was imposed by the smallness of the sample. While the findings of the study

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<sup>11</sup>George A. Ferguson, Statistical Analysis in Psychology and Education (McGraw-Hill Book Company, Inc., 1959), pp. 227-29.

<sup>12</sup>Ibid., pp. 179-83.



with respect to achievement-OCDQ subtest relationships should have a satisfactory degree of validity for this sample, caution should be exercised in the application of these findings to a general school population.

The study was further limited by principal and teacher variables which have not been controlled in the design of the study and which might, conceivably, contaminate the results. Such principal and teacher variables as age, experience in education, years of training, and tenure in their present school may be factors which influence achievement.





## CHAPTER IV

### ANALYSIS OF DATA

As a preliminary step in analyzing the data, information relative to the biographical characteristics of each school's principal and teachers will be examined. The remainder of the chapter will be devoted to the analysis of data pertaining to (1) Organizational Climate subtest scores and Organizational Climate classifications, and (2) academic achievement.

#### I. BIOGRAPHICAL CHARACTERISTICS OF PRINCIPALS AND TEACHERS

An examination of the biographical data provided by the eight principals in the study revealed a general similarity with respect to age, years in education, years in their present school, and years of training. The typical principal was between fifty and fifty-nine years of age, had twenty or more years' experience in education, had been associated with his present school for ten or more years, and had undertaken graduate education. The only notable deviation from this pattern was the principal of School C. Of the eight principals, he was the youngest (between thirty and thirty-nine years of age), had the least experience in education (between



ten and nineteen years), and he was the only principal in the first year at his school.

Table IV presents a tabulation of the biographical data provided by the 121 teacher respondents to the OCDQ. This information is summarized to permit comparisons among school teaching staffs.

Table IV reveals a number of differences in the biographical composition of the teaching staffs among the schools. The range in number of teachers, from ten (School D) to twenty-four (School H) is indicative of a considerable range in school size. With respect to staff composition by sex, School D had the smallest proportion of male teachers (40 per cent) and School G had the largest proportion (75 per cent).

An examination of the data pertaining to Ages indicates that the proportion of teachers under forty years of age in Schools A, B, D, F, and H exceeded 50 per cent. These schools were staffed by a higher proportion of younger teachers than were Schools C, E, and G.

Particularly revealing in the section summarizing Experience in Education is the fact that Schools A, D, and H were staffed with a much higher proportion of teachers with less than two years' teaching experience. The respective proportions were 22 per cent, 30 per cent, and 25 per cent.





TABLE IV

## SUMMARY OF TEACHER CHARACTERISTICS BY SCHOOLS

	SCHOOLS							
	A	B	C	D	E	F	G	H
<u>TEACHERS*</u> (N)	23	14	17	10	12	19	12	24
<u>PER CENT MALE</u>	52%	43%	59%	40%	50%	53%	75%	50%
<u>AGE IN YEARS</u>								
20 - 29	35%	22%	24%	60%	25%	42%	25%	46%
30 - 39	39	36	18	10	17	21	25	33
40 - 49	13	14	34	10	41	21	33	12
50 - 59	9	--	18	10	17	11	17	9
60 or over	4	28	6	10	--	5	--	--
<u>EXPERIENCE IN EDUCATION</u>								
0 - 1	22%	--%	--%	30%	9%	--%	8%	25%
2 - 4	13	29	12	10	33	32	8	21
5 - 9	22	--	23	50	9	32	42	25
10 - 19	30	29	47	10	40	21	25	25
20 or more	13	42	18	--	9	15	17	4
<u>YRS. AT PRES- ENT SCHOOL</u>								
0 - 1	26%	--%	53%	40%	25%	32%	8%	50%
2 - 4	26	57	12	30	42	36	33	17
5 - 9	48	29	35	20	33	32	50	33
10 or over	--	14	--	10	--	--	--	--
<u>YEARS OF TRAINING</u>								
1 - 1.99	22%	29%	18%	10%	9%	15%	8%	12%
2 - 2.99	4	7	12	40	32	11	8	17
3 - 3.99	13	14	18	20	9	5	8	9
4 - 4.99	35	36	34	20	32	53	43	54
5 - 5.99	17	7	12	10	9	5	33	4
6 or more	9	7	6	--	9	11	--	4

\*Teacher here refers to a full-time junior high school teacher.



It should also be noted that Schools B and C had a much larger proportion of teachers with ten or more years of teaching experience (71 per cent and 65 per cent).

The section Years at Present School indicates that Schools C, D, and H (53 per cent, 40 per cent, and 50 per cent, respectively) had a larger proportion of teachers who had been associated with their present school for less than two years than had other schools in the sample. However, the eight schools exhibited a degree of staff stability with respect to length of teacher tenure in their present school. This stability was indicated by the proportion (a minimum of 30 per cent occurring in School D) of teachers who had been associated with their present schools for at least five years.

The section of Table IV, Years of Training, indicates a certain homogeneity among seven of the eight schools with respect to the number of teachers with training at the graduate or post-graduate level. This range is from 50 per cent (School B) to 75 per cent (School G). School D deviated from this pattern with only 30 per cent of the teachers with training of four or more years.

In summary, the data presented in Table IV indicates a lack of homogeneity among the eight schools with respect to the biographical composition of their teaching staffs. Differences in distributions are observed in each of the six





categories.

## II. ORGANIZATIONAL CLIMATE DATA

In order to test the hypotheses two distinct sets of scores derived from the OCDQ raw data were used. The first set was composed of the normatively standardized scores with respect to the means and standard deviations for the total samples scores on each of the eight subtests.<sup>1</sup> The analysis of these normatively standardized scores enabled the investigator to study the relationship between the subtest climate characteristics of the schools and the achievement of their respective students.

The second set of scores necessary in testing the hypotheses was derived by standardizing each school's normatively standardized scores to a mean of fifty and a standard deviation of ten.<sup>2</sup> This ipsative standardization process completed the procedure required to determine the Organizational Climate which best characterized each school in the sample. The derivation of these scores (standardized normatively and ipsatively) permitted the investigation of the relationship

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<sup>1</sup>Refer to Chapter III, scoring of the instrument, p. 36.

<sup>2</sup>Ibid.



between the global concept of Organizational Climate and student achievement.

Table V presents the normatively standardized scores with respect to the means and standard deviations for the total samples' scores on each of the eight subtests. Table V also indicates the rank order of each school on each of the eight subtests.

A note of caution must be issued concerning the interpretation of the standardized scores arrayed in this table. These scores were derived on the basis of a relatively small sample (eight schools) and, while differences in the subtest raw scores were evident, these differences become magnified by the standardization procedure. For this reason, one should exercise caution when drawing conclusions about the characteristics of those schools which exhibit extreme subtest scores. For example, School G's Disengagement score of 70.37 indicates that the teachers of this school behaved considerably less as a cohesive group than did the teachers of the remaining seven schools. This score does not necessarily indicate that the teachers of School G were an uncohesive group.

Examination of Table V reveals that the high and low scores on the eight subtests were distributed among six of the eight schools. Such a distribution suggests that each of these six schools exhibited at least one distinctive subtest





TABLE V

OCDQ SUBTEST SCORES NORMATIVELY STANDARDIZED\*  
AND RANKED BY SCHOOLS

OCDQ SUBTESTS								
SCHOOL	DISENGAGE- MENT	HINDRANCE	ESPRIT	INTIMACY	ALOOFNESS	PRODUCTION EMPHASIS	THRUST	CONSIDERA- TION
A	55.56 (2)	48.90 (6)	57.80 (3)	47.80 (3)	48.12 (5)	58.93 (2)	56.72 (3)	39.88 (7)
B	44.44 (7)	55.40 (3)	33.41 (8)	45.53 (6)	46.23 (6)	53.97 (4)	39.49 (8)	48.48 (4)
C	34.26 (8)	39.02 (7)	66.34 (1)	47.73 (4)	49.06 (4)	49.01 (5)	60.08 (2)	59.62 (3)
D	47.22 (5)	30.78 (8)	48.05 (4)	46.17 (5)	54.71 (3)	47.08 (6)	66.81 (1)	63.66 (1)
E	44.46 (6)	55.49 (2)	48.01 (5)	40.42 (8)	69.81 (1)	47.02 (7)	41.18 (6)	37.35 (8)
F	54.63 (3)	51.10 (5)	45.61 (6)	44.57 (7)	56.60 (2)	57.94 (3)	52.94 (4)	45.45 (5)
G	70.37 (1)	64.82 (1)	40.73 (7)	53.83 (2)	34.91 (8)	26.19 (8)	41.60 (5)	63.16 (2)
H	47.29 (4)	54.94 (4)	60.24 (2)	74.91 (1)	39.63 (7)	58.97 (1)	40.76 (7)	41.90 (6)

\*Each subtest is standardized with a mean of 50 and a standard deviation of 10.



characteristic. School B had the lowest scores on both the Esprit and Thrust subtests and School C was lowest on the Disengagement and highest on the Esprit subtests. Further examination of Table V reveals that the lowest Hindrance score and the highest Thrust and Consideration scores were recorded by School D. Distinctive characteristics of School E were the low Intimacy and Consideration scores combined with the high Aloofness score. The highest scores on the Disengagement and Hindrance subtests, together with the lowest scores on the Aloofness and Production Emphasis subtests, were recorded by School G. School H registered the highest score on the Intimacy subtest. The two schools which did not exhibit extreme subtest scores were Schools A and F.

Table VI presents the ipsative standardization of each school's normatively standardized subtest scores together with the Organizational Climate category which best characterized each school in the sample.

The Climate classifications noted in Table VI reveal that the distribution of Organizational Climates in this investigation include five of the six classifications in the Halpin and Croft taxonomy. Two schools (C and D) most closely approximated the Open Climate prototype, School E was classified as Controlled, School G was classified as having a Familiar Climate, School A was classified as Paternal, and





three schools (B, F, and H) were classified as Closed Climate schools. None of the eight schools in the sample were classified as possessing the Autonomous Climate. A tabulation of similarity scores is contained in Appendix C.

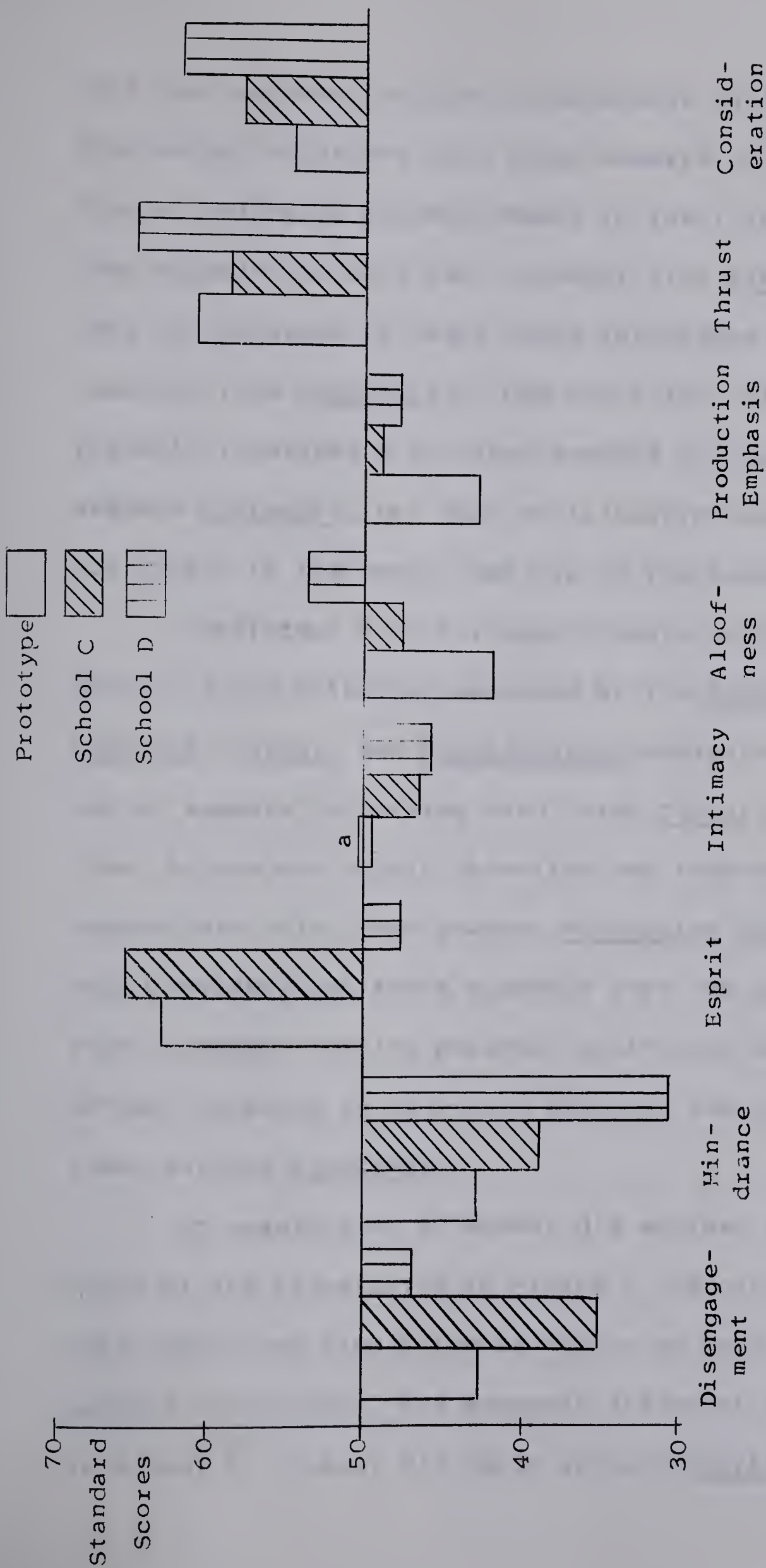
TABLE VI  
OCDQ SUBTEST SCORES\* AND CLASSIFICATION OF SCHOOLS  
ACCORDING TO ORGANIZATIONAL CLIMATE

SCHOOL	OCDQ SUBTESTS								CLIMATE
	DISENGAGE- MENT	HINDRANCE	ESPRIT	INTIMACY	ALOOFNESS	PRODUCTION EMPHASIS	THRUST	CONSIDERA- TION	
A	55	46	59	45	45	60	57	33	Paternal
B	48	64	31	49	51	62	41	54	Closed
C	35	39	65	47	48	49	59	58	Open
D	47	31	48	46	54	48	65	62	Open
E	46	58	50	42	72	49	43	39	Controlled
F	57	50	38	37	61	64	54	39	Closed
G	64	60	44	53	40	34	45	59	Familiar
H	46	52	57	70	39	56	40	41	Closed

\*Each school's normatively standardized scores are ipsatively standardized with a mean of 50 and a standard deviation of 10.

An examination of each school's subtest scores permits speculation concerning the manner in which the subtest





<sup>a</sup> Prototype Intimacy score is 50.

FIGURE 1

COMPARISON OF THE PROTOTYPIC OPEN CLIMATE AND SAMPLE OPEN CLIMATES  
ON THE EIGHT SUBTESTS OF THE OCDQ





that the teachers received considerable satisfaction both from social relations with other members of the group and from a feeling of accomplishment in their teaching endeavours. They appeared to work well together (low Disengagement) and were not burdened by tasks which interfered with the job of teaching (low Hindrance). One may infer that they enjoyed friendly relations with other members of the staff (near average Intimacy), but such socialization was not a conspicuous factor in the social make-up of the school.

Consistent with the Open Climate profile was the behavior of the principal measured by the Aloofness, Production Emphasis, Thrust, and Consideration subtests. The principal set an example by working hard (high Thrust) but, at the same time, he was not highly directive and task-oriented in his supervisory role (near average Production Emphasis). The high Consideration score suggests that the principal exhibited a concern for the personal well-being of his teachers without behaving in an overly informal and personal manner (near average Aloofness).

An examination of School D's subtest scores found in Table VI and illustrated in Figure 1 indicates that, while this school was classified as having an Open Climate, the general "atmosphere" was somewhat different from that found in School C. School D's below average Esprit score suggests



that there was a less effective balance between social-needs satisfaction and task-accomplishment than that found in School C. While the teachers of School D worked fairly well together (near average Disengagement) they appeared to behave much less as a cohesive group than did the teachers of School C. The above average Aloofness score suggests that the principal of School D maintained a higher degree of social distance in his relations with his staff members than did the principal of School C. As is the case in School C, the principal of School D set an example by working hard himself (high Thrust) and showed a concern for the personal well-being of his staff members (high Consideration).

#### Controlled Climate School: School E

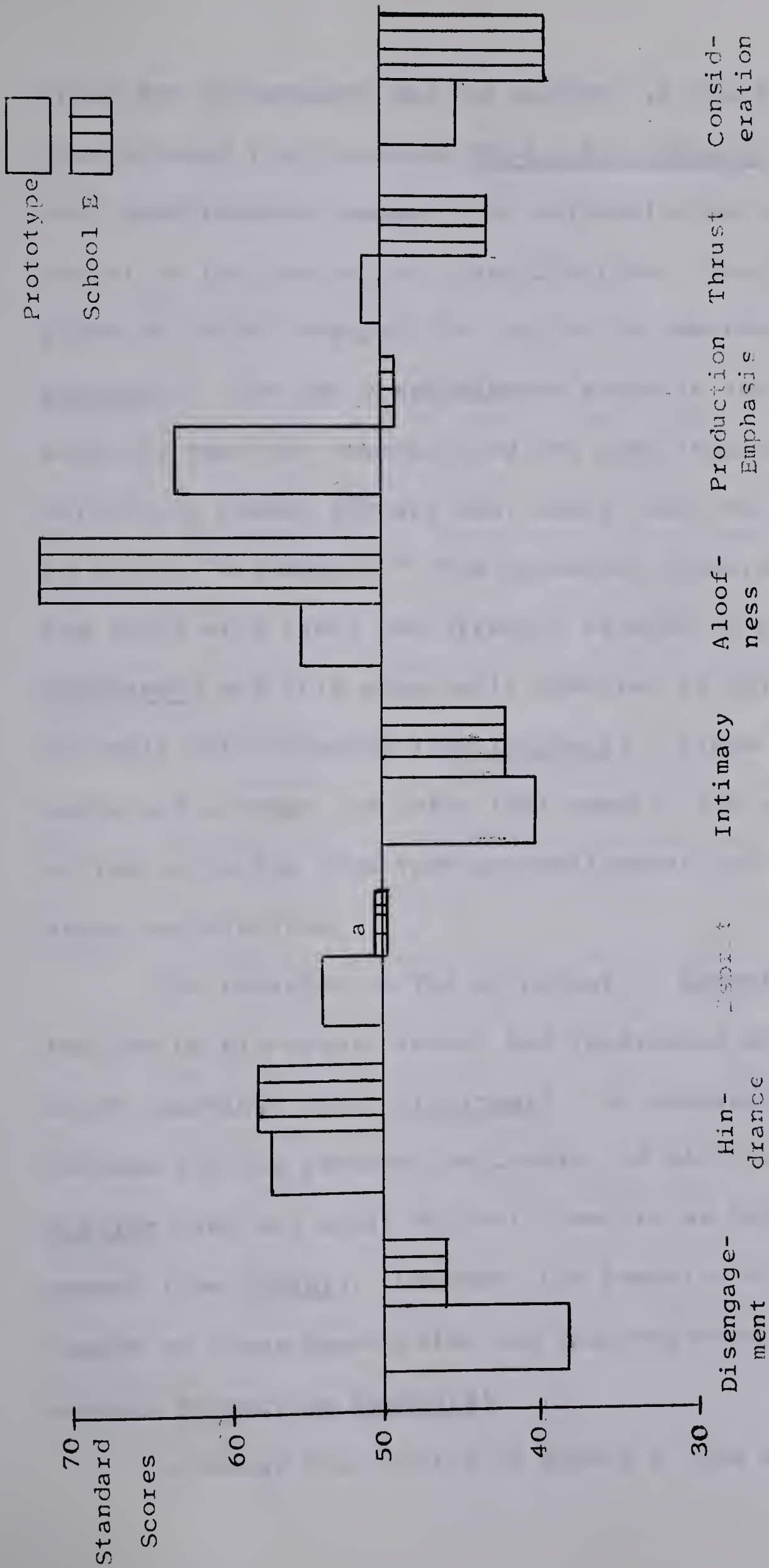
Figure 2 presents a graphic comparison of the prototypic Controlled Climate and the profile of the sample Controlled Climate on the eight subtests of the OCDQ. Examination of Figure 2 indicates that, based on a directional deviation from the mean, School E approximated the prototype on the Disengagement, Hindrance, Intimacy, Aloofness, and Consideration subtests.

The typically Controlled Climate describes a school situation in which there is a press for achievement at the expense of social-needs satisfaction. Although this overt









<sup>a</sup>School E's Esprit score is 50.

FIGURE 2

COMPARISON OF PROTOTYPIC CONTROLLED CLIMATE AND SAMPLE CONTROLLED CLIMATE  
ON THE EIGHT SUBTESTS OF THE OCDQ



press for achievement was not evident in the Production Emphasis score (near average Production Emphasis), other subtest relationships suggest the rationale for placing this school in the Controlled classification. The teachers appeared to be "engaged" in the job of teaching (low Disengagement). The low Disengagement score in this climate might indicate that the teachers had few opportunities to work on matters of common concern and, hence, had few opportunities to become "disengaged." The principal appeared to burden the staff with tasks not directly related to teaching (high Hindrance) and this apparently resulted in little time for friendly relationships (low Intimacy). Since the Esprit score was average, we infer that general job satisfaction resulted primarily from task-accomplishment and not from social-needs satisfaction.

The behavior of the principal of School E was characterized by his highly formal and impersonal approach in staff relations (high Aloofness). He appeared to have little concern for the personal well-being of his staff (low Consideration) and his staff did not view him as being a hard worker (low Thrust). However, his behavior did indicate a degree of close supervision and task-oriented direction (near average Production Emphasis).

Although the profile of School E does differ from the





prototypic Controlled Climate, particularly on the Production Emphasis and Thrust subtests, the Controlled Climate best described the general climate of School E.

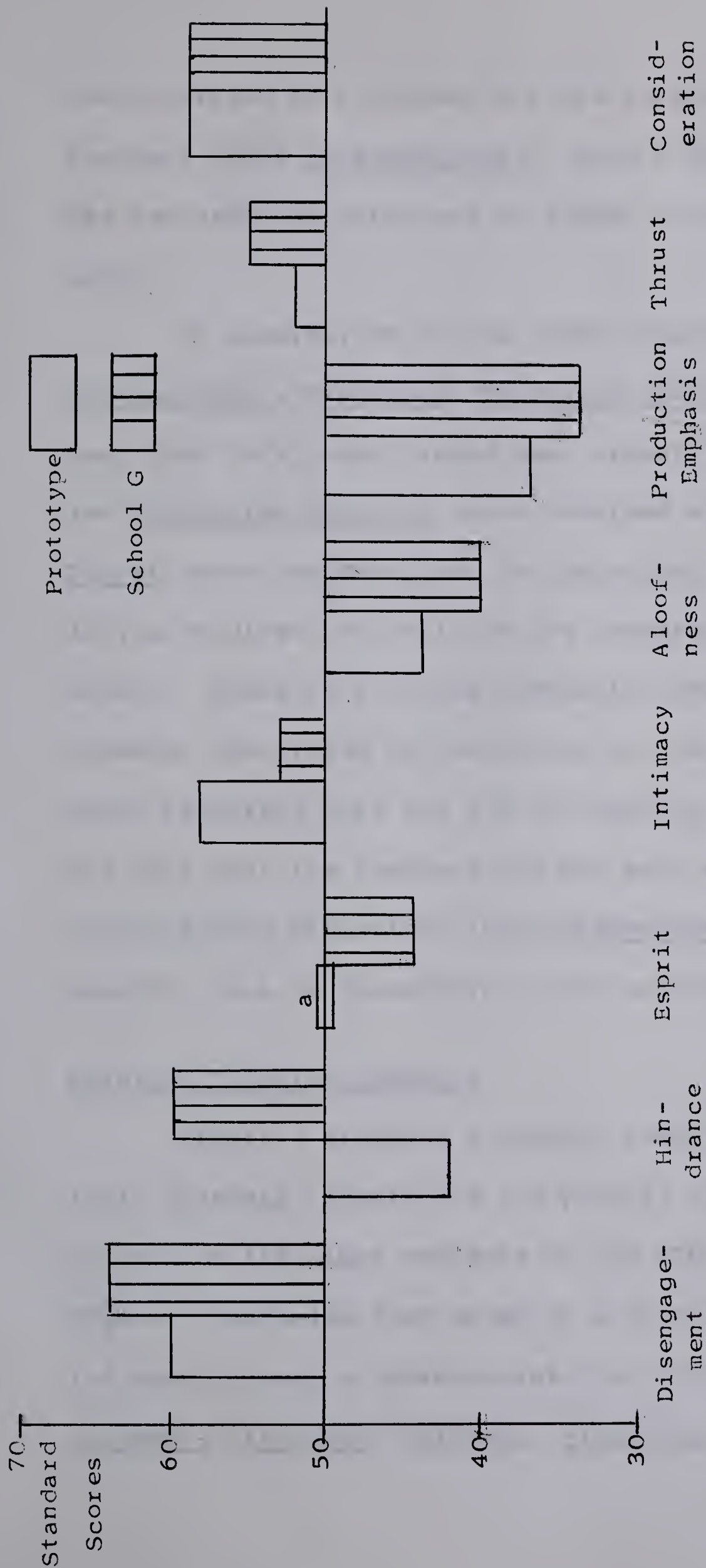
#### Familiar Climate: School G

Figure 3 presents a graphic comparison of the Prototypic Familiar Climate and the profile of the sample Familiar Climate on the eight subtests of the OCDQ. Examination of Figure 3 indicates that, based on a directional deviation from the mean, School G approximated the prototype on the Disengagement, Intimacy, Aloofness, Production Emphasis, and Consideration subtests.

The typically Familiar Climate describes a school situation in which social-needs satisfaction is extremely high and little is done to control or direct the group's activities toward goal accomplishment. This pattern was clearly evident in the profile scores of School G.

The stress on social-needs satisfaction can be noted by the high scores on the Intimacy and Consideration subtests and the low score on the subtest measuring Aloofness. The teacher group had established personal friendships among themselves (high Intimacy) and one suspects that the principal maintained a close social relationship with his staff (low Aloofness). The principal's behavior was further





<sup>a</sup>Prototype Esprit score is 50.

FIGURE 3

COMPARISON OF PROTOTYPIC FAMILIAR CLIMATE AND SAMPLE FAMILIAR CLIMATE  
ON THE EIGHT SUBTESTS OF THE OCDQ





characterized by a concern for the personal well-being of his teachers (high Consideration). From a social point of view, the teachers and principal of School G formed a closely knit group.

An examination of the profile scores which measured Disengagement, Hindrance, Production Emphasis, and Thrust reveal that this group lacked goal orientation. The extremely low Production Emphasis score combined with a below average Thrust score suggests that the principal of School G did little to direct or evaluate the teaching program in his school. There is a strong indication that the teachers were somewhat frustrated by conditions in the school environment which interfere with the job of teaching (high Hindrance). The fact that the teachers did not work well together in task-oriented situations (high Disengagement) reflects a possible lack of leadership by the principal.

#### Paternal Climate: School A

Figure 4 presents a graphic comparison of the Prototypic Paternal Climate and the profile of the sample Paternal Climate on the eight subtests of the OCDQ. Examination of Figure 4 indicates that, based on a directional deviation from the mean, School A approximates the prototype on the Disengagement, Hindrance, Intimacy, Aloofness, Production Emphasis



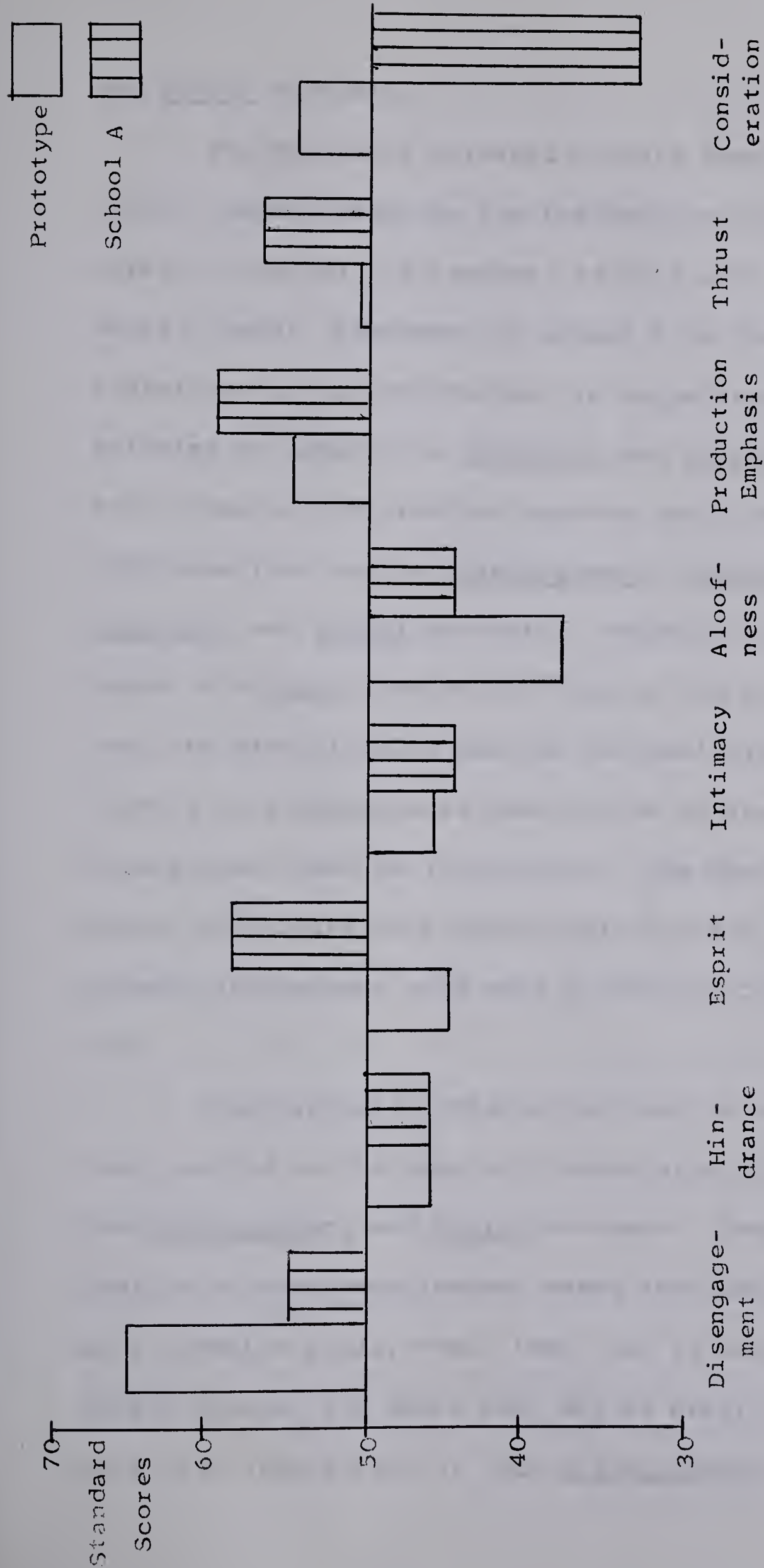


FIGURE 4

COMPARISON OF PROTOTYPIC PATERNAL CLIMATE AND SAMPLE PATERNAL CLIMATE  
ON THE EIGHT SUBTESTS OF THE OCDQ





and Thrust subtests.

The typically Paternal Climate describes a school situation characterized by the ineffective attempts of the principal to control the teachers as well as to satisfy their social needs. Placement of School A in the Paternal Climate classification is determined, in large measure, by the exact matching of School A's Hindrance and Intimacy subtests scores with those of the profile, together with reasonably close approximations on the Disengagement, Aloofness, Production Emphasis, and Thrust subtests. However, the departure of School A's Esprit score from that of the prototype suggests that the statistically derived Paternal Climate classification is an inappropriate description of the type of social interaction found in this school. The above average Esprit score, indicative of a high level of staff "morale," is grossly incongruous with such a "Closed" Climate classification.

A particularly interesting feature of School A's subtest profile is the apparent inconsistency of high scores on the Disengagement and Esprit subtests. One would suspect that in a school environment where the teachers do not behave as a cohesive group, where they tend to socialize in small select groups, and where they may be critical of other members (all indications of high Disengagement), it would be



unusual to attain as high a level of Esprit as was found in School A. For this particular group, the factors contributing to high Disengagement did not detract from a high level of morale in the organization. It may well be that the teachers of this school derived considerable satisfaction from their associations within smaller and somewhat insular groups.

The high Esprit attributed to School A probably expresses more task-accomplishment satisfaction than that stemming from social-needs. For the teachers of this school other members of the group did not form the basis of close personal friendships (low Intimacy). The principal of School A was directive and task-oriented in his behavior (high Production Emphasis) and he was considered to be a hard worker by the members of his staff (high Thrust). While he was personal and informal in his relations with his teachers (low Aloofness) they felt that he showed a lack of concern for their personal well-being (low Consideration). As evidenced by the high Esprit score, the teachers of this school seemed to respond favorably to this type of militant principal behavior and obtained considerable job satisfaction within this directive and task-oriented environment.

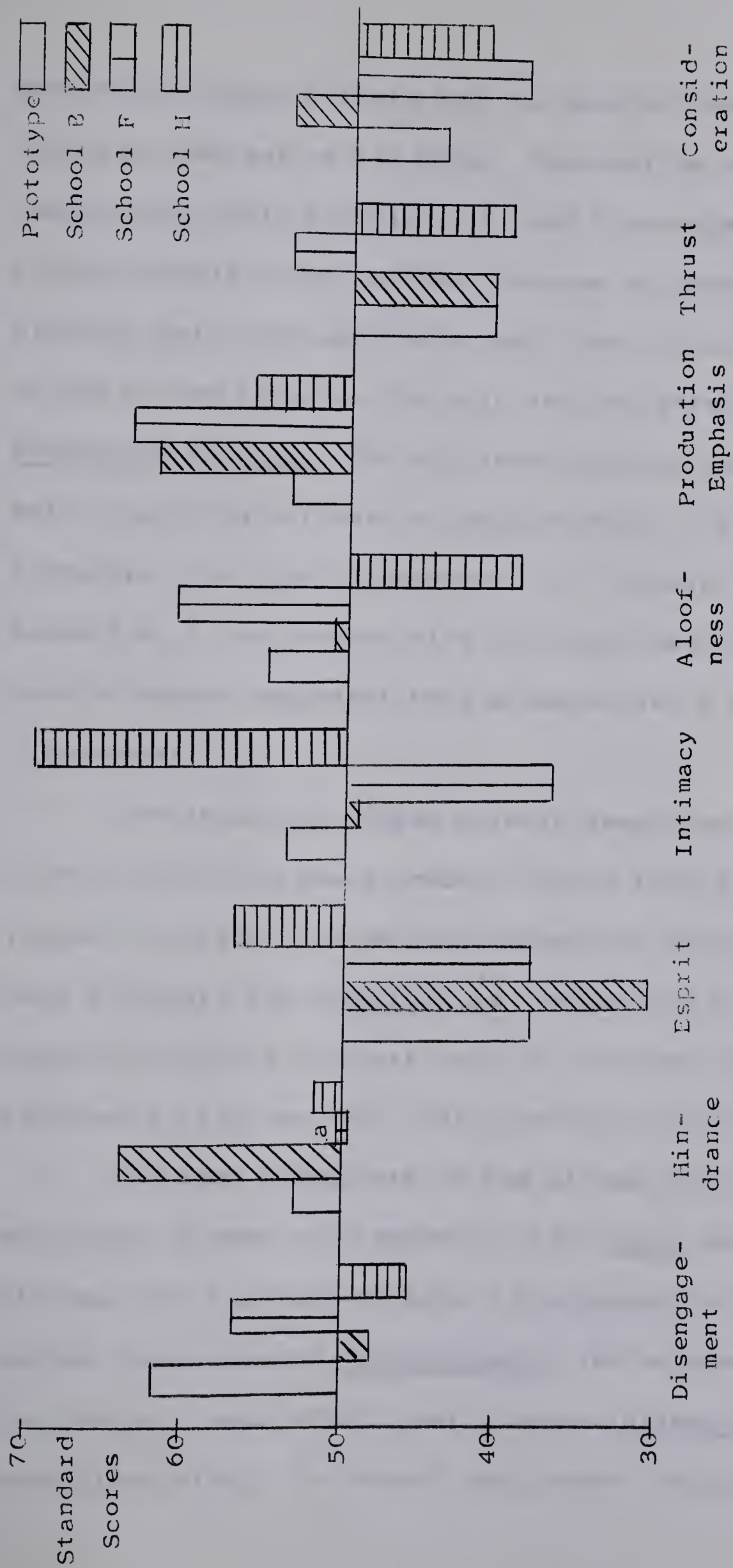
Closed Climate Schools: School B, School F, and School H.

Figure 5 presents a graphic comparison of the









<sup>a</sup>School F's Hindrance score is 50.

FIGURE 5

COMPARISON OF THE PROTOTYPIC CLOSED CLIMATE AND SAMPLE CLOSED CLIMATES  
ON THE EIGHT SUBTESTS OF THE OCDQ



prototypic Closed Climate and the sample Closed Climates on the eight subtest of the OCDQ. Examination of Figure 5 reveals that, while Schools B, F, and H are classified as Closed Schools, their subtests scores differed in major aspects, both from each other and from the prototypic profile of the Closed Climate. On only two subtests, Hindrance and Production Emphasis, did all three schools possess scores which approximate those of the prototype. It is evident, therefore, that the "atmosphere" or "climate" within each of Schools B, F, and H was quite different and the respective profile scores represent both a degree and a direction of "closedness."

The typically Closed Climate describes a school situation in which the group members derive little satisfaction in respect to either task-accomplishment or social-needs. In such a Climate the principal is ineffective in directing the activities of the teachers and, at the same time, he is not inclined to look out for their personal welfare.

The best indicators of the closed nature of School B and School F were the respective low Esprit subtest scores. Although the teachers of School B appeared to work well together (near average Disengagement) and enjoyed friendly relations with each other (near average Intimacy), there were conditions within the school environment which created a low





level of morale. The principal was perhaps regarded as "non-genuine" in his efforts to move the organization for he expected his staff to be hard workers (high Production Emphasis) and yet did little to motivate them by his personal example (low Thrust). His policies did not facilitate task-accomplishment by the teachers since they were required to fulfill many duties not directly related to the job of teaching (high Hindrance). The low Esprit level in School B probably reflected teacher dissatisfaction with weak administrative leadership in the area of task-accomplishment.

Unlike the situation in School B, the low Esprit score attained by School F was probably the result of an over emphasis on task-oriented goals at the expense of social-needs satisfaction. Examination of School F's climate profile reveals this press for achievement (high Production Emphasis, high Thrust, and low Hindrance). The high Aloofness score indicates that the principal was formal and impersonal in his relations with his teachers and he did not appear to have a concern for their personal welfare (low Consideration). The staff of this school did not behave as a cohesive group in task-oriented endeavours (high Disengagement) and there is a strong indication that they derived little satisfaction from social contacts with other staff members (low Intimacy).



The placement of School H in the Closed Climate classification is determined, in large measure, by the close matching of the Hindrance, Production Emphasis, Thrust, and Consideration subtest scores. However, the departure of School H's Disengagement and Esprit subtest scores from those of the prototype suggests that that the statistically derived Closed Climate classification is an inappropriate description of the type of social interaction found in this school. The below average Disengagement score indicates that the teachers behaved as a cohesive group in task-oriented situations and the above average Esprit rating reveals that task-accomplishment and social needs were being satisfied in the school environment. These conditions were grossly incongruous with a Closed Climate classification.

However, consistent with the Closed Climate profile was the behavior of the principal measured by the Production Emphasis, Thrust, and Consideration subtests. The principal seemed to be directive and task-oriented in his supervisory role (above average Production Emphasis) but the low Thrust score indicates that he, himself, did not set a hard-working example. We note that he was informal and personal in his relations with his staff (low Aloofness) but, at the same time, his behavior showed a lack of concern for the personal well-being of his teachers (low Consideration).







In assessing the climate of School H, one suspects that leadership emerged from within the teacher group rather than from the principal. Although the principal ranked low on both the Thrust and Consideration subtests, the teachers worked well together (low Disengagement), they enjoyed their social contacts with fellow staff members (high Intimacy), and their appeared to be an effective balance between social needs and task-accomplishment satisfactions (high Esprit).

### III. ACADEMIC ACHIEVEMENT DATA

Table VII presents the mean academic achievement score for each school together with rank order according to school achievement. The transmuted scores were derived from the results attained by the students in each school on the 1964 Grade Nine Departmental Examinations.

Examination of Table VII reveals that the range in achievement among the eight schools was 17.9 points. The students attending School G attained the highest school standing, a school mean of 317.0. The lowest standing was attained by the pupils attending School D, a school mean of 299.1.



TABLE VII

SCHOOL ACHIEVEMENT BY MEAN TRANSMUTED SCORE AND RANK

School	Number of Students	Mean Achievement Score	Achievement Rank
A	193	315.0	3
B	111	309.5	5
C	156	315.7	2
D	70	299.1	8
E	133	307.8	6
F	142	303.7	7
G	112	317.0	1
H	196	312.5	4
	1113	Mean 311.0	





## CHAPTER V

### THE RESULTS: THE RELATIONSHIP BETWEEN ACADEMIC ACHIEVEMENT AND THE ORGANIZATIONAL CLIMATE OF SCHOOLS

This chapter presents the statistical analyses of the data pertaining to the testing of the hypotheses. A restatement of the hypotheses precedes the respective analyses of variance and Spearman's rank tests. The chapter concludes with a discussion of the results.

#### I. RESTATEMENT OF THE HYPOTHESES

Hypothesis 1. Academic achievement is not related to the Organizational Climate of a school.

Hypothesis 1 will be tested by the following null hypotheses:

$H_{01.1}$ : There are no statistically significant differences between mean-achievement-scores when schools are classified on the basis of Organizational Climate.

$H_{01.2}$ : The correlation between mean-achievement-scores and the Organizational Climate of schools is not significantly different from zero.



Hypothesis 2. Academic achievement is not related to the respective OCDQ subtests.

Hypothesis 2 will be tested by the following null hypotheses:

$H_{02.1}$ : There are no statistically significant differences in mean-achievement-scores when schools are grouped on the basis of mean scores on the respective OCDQ subtests.

$H_{02.2}$ : The correlation between mean-achievement-scores and the respective OCDQ subtest mean scores is not significantly different from zero.

## II. TESTING THE HYPOTHESES BY ANALYSIS OF

### VARIANCE: ONE-WAY CLASSIFICATION

To test Hypothesis 1, null hypothesis  $H_{01.1}$ , two analysis of variance tests were applied with confidence limits set at the .05 level. In each case, mean-achievement-scores served as the dependent variable and Organizational Climate as the independent variable.

The first test involved the grouping of school according to their Climate classifications and then testing the significance of differences between group achievement means.

Five Climate groups were apparent in the data: (1) Open:





Schools C and D; (2) Controlled: School E; (3) Familiar: School G; (4) Paternal: School A; (5) Closed: Schools B, F, and H.<sup>1</sup>

Table VIII presents the analysis of variance data for this test.

TABLE VIII  
ANALYSIS OF VARIANCE WITH FIVE CLIMATE GROUPS

Source of Variation	Sum of Squares	df.	Mean Square
Between Groups	8,666	4	2,167
Within Groups	5,301,431	1,108	4,785
p. = .79*			F = .45

\*Indicates the probability of accepting the null hypothesis that there is no statistically significant difference among group-achievement-means.

Examination of Table VIII reveals a small observed F value of .45 with 4 degrees of freedom between groups and 1.108 degrees of freedom within groups. The probability for acceptance of the null hypothesis that no statistically significant difference exists among group achievement means is .79. This probability figure far exceeds the .05 level of confidence required to reject the null hypothesis.

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<sup>1</sup>Cf., Table VI, p. 53.



Since the differences among group achievement means are not significant, the null hypothesis of a relationship between academic achievement and Organizational Climate is supported by this analysis.

A second analysis of variance test applied to test Hypothesis 1, null hypothesis  $H_{01.1}$ , involved the placing of each school in one of two groups according to the Openness of that School's Climate classification. Schools classified as Open, Autonomous, or Controlled were placed in the "Open" category and those classified as Familiar, Paternal, or closed were placed in the "Closed" category.<sup>2</sup>

Table IX presents the analysis of variance data for this test.

TABLE IX  
ANALYSIS OF VARIANCE WITH TWO CLIMATE GROUPS

Source of Variation	Sum of Squares	df.	Mean Square
Between Groups	485	1	485.0
Within Groups	5,309,612	1,111	4,779.0
p. = .75*			F = .10

\* Indicates the probability of accepting the null hypothesis that there is no statistically significant difference between group-achievement-means.

<sup>2</sup>Cf., p. 27.





Examination of Table IX reveals a small observed F value of .01 with 1 degree of freedom between groups and 1,111 degrees of freedom within groups. The probability for acceptance of the null hypothesis that no statistically significant difference exists between group achievement means is .75. This probability figure far exceeds the .05 level of confidence required to reject the null hypothesis.

Since the difference between group achievement means is not significant, this second test also accepts the null hypothesis of no relationship between academic achievement and Organizational Climate.

To summarize, the two analysis of variance treatments of the data accept the hypothesis that academic achievement is not related to the Organizational Climate of a school.

The testing of Hypothesis 2, null hypothesis  $H_{02.1}$ , involved eight independent analysis of variance tests with confidence limits set at the .05 level. These tests were used to observe the effectiveness of the eight climate dimensions or subtests as predictors of academic achievement. In each of these tests the schools were so arranged that those ranking 1 and 2 in the subtest were placed in one group, those ranking 3, 4, 5, and 6 were placed in a second group, and those ranking 7 and 8 were placed in a third group.<sup>3</sup>

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<sup>3</sup>Cf., Table V, p. 51.



The arrangement of the schools in these groups is presented in Table X.

In each of the eight analysis of variance tests mean-achievement-scores served as the dependent variable and sub-test group as the independent variable.

TABLE X  
WITHIN SUBTEST GROUPING OF SCHOOLS

Subtest	Schools		
	Group 1 (ranks 1,2)	Group 2 (ranks 3,4,5,6)	Group 3 (ranks 7,8)
Disengagement	A and G	D,E,F, and H	B and C
Hindrance	E and G	A,B,F, and H	C and D
Esprit	C and H	A,D,E, and F	B and G
Intimacy	G and H	A,B,C, and D	E and F
Aloofness	E and F	A,B,C, and D	G and H
Production Emphasis	A and H	B,C,D, and F	E and G
Thrust	C and D	A,E,F, and G	B and H
Consideration	D and G	B,C,F, and H	A and E

Table XI presents the analysis of variance data for these tests.

Examination of Table XI reveals that the F ratios are





TABLE XI

EIGHT ANALYSES OF VARIANCE WITH THREE GROUPS RESPECTIVELY

Subtest	Source of Variation	Sum of Squares	df.	Mean Square
Disengage- ment	Between Groups	9,168	2	4,584
	Within Groups	5,300,929	1,110	4,776
	p* = .40			F = .96
Hindrance	Between Groups	108	2	54
	Within Groups	5,309,989	1,110	4,784
	p* = .99			F = .01
Esprit	Between Groups	103	2	52
	Within Groups	5,309,994	1,110	4,784
	p* = .99			F = .01
Intimacy	Between Groups	10,790	2	5,397
	Within Groups	5,299,303	1,110	4,744
	p* = .32			F = 1.13
Aloofness	Between Groups	10,790	2	5,397
	Within Groups	5,299,303	1,110	4,744
	p* = .32			F = 1.13
Production Emphasis	Between Groups	5,453	2	2,727
	Within Groups	5,304,644	1,110	4,779
	p* = .57			F = .57
Thrust	Between Groups	144	2	72
	Within Groups	5,309,953	1,110	4,784
	p* = .99			F = .02
Considera- tion	Between Groups	885	2	443
	Within Groups	5,309,212	1,110	4,783
	p* = .93			F = .09

p\* Indicates the probability of accepting the null hypotheses that there is no statistically significant difference between-group-achievement means.



exceedingly small with the maximum observed F ratio of 1.13 evident in the subtests measuring Intimacy and Aloofness. For these subtests the probability for acceptance of the null hypothesis that no difference exists among group achievement means is .32. This figure is the lowest of the probability figures but it far exceeds the .05 probability figure required to accept the alternative hypothesis that Intimacy and Aloofness factors in a school environment relate to the mean achievement level of that school's students.

Further examination of Table XI indicates a more pronounced rejection of a statistically significant relationships between achievement and the OCDQ subtests measuring Disengagement, Hindrance, Esprit, Production Emphasis, Thrust, and Consideration. For these subtests, the F values range from .96 on the Disengagement analysis to .01 on the Hindrance analysis. The respective probability figures for acceptance of the null hypothesis are .40 and .99.

To summarize, the results presented in Table XI reveal that these analyses of the data accept the null hypothesis of no statistically significant relationship between achievement and any of the eight subtest components of the OCDQ.







### III. TESTING THE HYPOTHESES BY SPEARMAN'S COEFFICIENT OF RANK CORRELATION

To test Hypothesis 1, null hypothesis  $H_{01.2}$ , it was necessary to assign to each school a mean achievement rank together with a rank number indicative of its Organizational Climate category. The schools were ranked in descending order according to mean achievement<sup>4</sup> and then reranked in descending order on the Open to Closed Climate continuum.<sup>5</sup> For schools described by the same Climate category, higher ranks were assigned to the schools which more closely approximated that Climate prototype. Information relative to profile similarity scores is found in Appendix C.

The computational formula for the derivation of Spearman's coefficient of rank correlation is:

$$\rho = 1 - \frac{6 \sum d^2}{N(N^2 - 1)}$$

where  $\rho$  is Spearman's correlation coefficient,  $d$  is the difference between paired ranks, and  $N$  is the number of ranks.

Information relevant to the testing of Hypothesis 1 by Spearman's  $\rho$  is presented in Table XII.

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<sup>4</sup>Cf., Table VII, p. 71.

<sup>5</sup>Cf., Table VI, p. 53.



TABLE XII

RANK CORRELATION BETWEEN ACHIEVEMENT AND THE  
ORGANIZATIONAL CLIMATE OF SCHOOLS

	Schools								$d^2$	$\rho$
	A	B	C	D	E	F	G	H		
Achievement Rank	3	5	2	8	6	7	1	4	87.50	-.042
Climate Rank	5	6.5	1	2	3	6.5	4	8		

Examination of Table XII reveals a correlation of  $-.042$  between the achievement and Climate variables. Since the absolute value of the correlation of  $-.042$  is less than  $.643$ , the critical value of  $\rho$  required for significance at the  $.05$  level,<sup>6</sup> null hypothesis  $H_{01.2}$  is accepted.

Specifically, the data presented in Table XII accepts the null hypothesis that academic achievement is not related to the Organizational Climate of a school. The correlation between Organizational Climate and achievement is not significant.

To test Hypothesis 2, null hypothesis  $H_{02.2}$ , eight independent rank correlation tests were applied. In each case, school achievement ranks served as the dependent variable and

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<sup>6</sup>George A. Ferguson, Statistical Analysis in Psychology and Education (Toronto: McGraw-Hill Company, Inc., 1959), p. 316.





the respective independent variables were the rank standings of schools on each of the eight OCDQ subtests. The achievement rank of each school was presented in Table VII;<sup>7</sup> information relative to school subtest ranking was presented in Table V.<sup>8</sup>

Information relevant to the testing of Hypothesis 2 by Spearman's  $\rho$  is presented in Table XIII.

Examination of Table XIII reveals significant correlations between school rankings on achievement and two OCDQ subtests. The absolute values of the achievement-Intimacy correlation of  $+.667$  and the achievement-Aloofness correlation of  $-.690$  exceed  $.643$ , the critical value of  $\rho$  at the  $.05$  level. Hence, the null hypothesis  $H_{02.2}$  is rejected and it may be stated that a significant correlation exists between the respective achievement-Intimacy and the achievement-Aloofness rankings.

Further examination of Table XIII reveals the lack of significant correlation between school ranking on achievement and the remaining six OCDQ subtests. The absolute values of the correlations between achievement and Disengagement, Hindrance, Esprit, Production Emphasis, Thrust, and

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<sup>7</sup>Cf., p.

<sup>8</sup>Cf., p.



TABLE XIII

RANK CORRELATIONS BETWEEN SCHOOL ACHIEVEMENT  
AND THE EIGHT SUBTESTS OF THE OCDQ

School	Achievement	OCDQ SUBTESTS							
		Disengage- ment	Hindrance	Esprit	Intimacy	Alloofness	Production Emphasis	Thrust	Considera- tion
A	3	2	6	3	3	5	2	3	7
B	5	7	3	8	6	6	4	8	4
C	2	8	7	1	4	4	5	2	3
D	8	5	8	4	5	3	6	1	1
E	6	6	2	5	8	1	7	6	8
F	7	3	5	6	7	2	3	4	5
G	1	1	1	7	2	8	8	5	2
H	4	4	4	2	1	7	1	7	6
$(d^2)^a$		66	58	68	28	142	90	92	80
b		+.214	+.310	+.190	+.667*	-.690*	-.071	-.096	+.048

<sup>a</sup>Sum of the squared differences between paired achievement and respective subtest ranks.

<sup>b</sup>Spearman's coefficient of rank correlation between achievement and respective subtests.

\*Significant at the .05 level of confidence.

Consideration, respectively, are less than .643, the critical value of  $\rho$  at the .05 level. Thus, for these six subtests,





null hypothesis  $H_{02.2}$  is accepted. The respective correlations between school-achievement-means and Disengagement, Hindrance, Esprit, Production Emphasis, Thrust, and Consideration are not significantly different from zero.

#### IV. DISCUSSION OF THE RESULTS

The analysis of variance technique was employed to test whether or not the arranging of schools is meaningful Climate and subtest groupings would result in statistically significant differences in group achievement. The acceptance of Hypotheses 1 and 2 by this analysis of variance treatment indicates that, for this sample, the type of social interaction among staff members within their school environment was not a statistically significant predictor of academic achievement.

The lack of relationship between achievement and the global concept of Organizational Climate revealed by the analysis of variance treatment supports the results of the Spearman Rank Test and the findings of investigations by Feldvebel<sup>9</sup> and Andrews.<sup>10</sup>

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<sup>9</sup>Cf., p. 17.

<sup>10</sup>Cf., p. 20.



However, the rejection by the analysis of variance tests of statistically significant relationships between achievement level and any of the subtest components of the OCDQ should be regarded with caution in view of the findings of the previously cited investigations. Feldvebel found significant relationships between achievement and the subtests measuring Production Emphasis and Consideration.<sup>11</sup> The Andrews study revealed a significant correlation between achievement and Intimacy.<sup>12</sup>

Although the differences between group-achievement-means were not statistically significant, the rank correlation tests provided significant correlations between achievement and the subtests measuring Intimacy and Aloofness respectively.

The correlation of .667 between school achievement and Intimacy rankings indicates that higher levels of achievement were associated with higher levels of Intimacy among staff members. The correlation of -.690 between school achievement and Aloofness rankings indicates that higher levels of achievement were associated with lower levels of Aloofness

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<sup>11</sup>Cf., p.

<sup>12</sup>Cf., p.





## CHAPTER VI

### SUMMARY, CONCLUSIONS, FURTHER RESEARCH, AND IMPLICATIONS

#### I. SUMMARY

##### The Problem

The rationale for the study was predicated on the assumption that there are factors within schools related to the organizational structure, to group relations, and to administrative leadership which might conceivably influence their effectiveness in attaining academic goals. This study was designed to investigate the relationship between certain social characteristics of school organizations and the academic achievement of their students.

Specifically, the problem involved the study of the relationship between academic achievement as measured by Grade Nine Departmental Examinations and the concept of organizational climate as measured by the Organizational Climate Description Questionnaire (OCDQ). The problem was investigated by the following null hypotheses:

Hypothesis 1. Academic achievement is not related to the Organizational Climate of a school.



on the part of the principal. While these correlations are statistically significant, the partial rejection of Hypothesis 2, that academic achievement is not related to any of the OCDQ subtests, should be interpreted with caution. In applying the rank correlation technique, no assumptions have been made concerning the significance between the school achievement means from which the ranking order was derived.

It is interesting to note that the only two significant correlations, the achievement-Intimacy and the achievement-Aloofness relationships, are oriented to social-needs satisfaction rather than task-accomplishment. Absent in the analyses of the data, for example, were significant relationships between achievement-Production Emphasis and achievement-Thrust correlations. The Production Emphasis and Thrust subtests are indicators of task-oriented behavior on the part of the principal and might be expected to promote higher levels of achievement in those schools where such ratings were high. However, the rank correlation tests did not support this speculation.





Hypothesis 1 was tested by the following null hypotheses:

H<sub>0</sub> 1.1: There are no statistically significant differences between mean-achievement-scores when schools are classified on the basis of Organizational Climate.

H<sub>0</sub> 1.2: The correlation between mean-achievement-scores and the Organizational Climate of schools is not significantly different from zero.

Hypothesis 2. Academic achievement is not related to the respective OCDQ subtests.

Hypothesis 2 was tested by the following null hypotheses:

H<sub>0</sub> 2.1: There are no statistically significant differences in mean-achievement-scores when schools are grouped on the basis of mean scores on the respective OCDQ subtests.

H<sub>0</sub> 2.2: The correlation between mean-achievement-scores and the respective OCDQ subtest mean scores is not significantly different from zero.



### Instrumentation

The instrument used to measure academic achievement was the 1964 battery of Departmental Examinations set by the Alberta Department of Education. The results of the examinations in Language, Literature, Mathematics, Reading, Science, and Social Studies were scaled and summed for each student with a possible aggregate score of 500. The examination in each subject was accepted by educational authorities in the province as meeting a satisfactory level of content validity.

The instrument used to collect data concerning the climate of schools was the Organizational Climate Description Questionnaire (OCDQ). The sixty-nine items comprising this instrument represent measures of behavior within the school organization with a focus on two areas; (a) the teachers as a group and (b) the principal. Eight dimensions of organizational behavior are described in the questionnaire, four of which apply to the inter-personal relations among the teachers. The other dimensions measure the characteristic behavior of the principal. From the manner in which scores were arrayed on these dimensions or subtests, it was possible to ascribe to each school in the sample one of six Organizational Climate classifications.





### The Sample and Control of Variables

The sample consisted of eight schools in a large urban school system. The schools were selected in accordance with the following criteria: (1) All schools had a minimum of two grade nine classes, which insured a student sample of adequate size; (2) All principals had a minimum of three and one-half days of supervisory time in which they could fulfill their administrative duties; (3) All schools were located in similar socio-economic areas, which tended to negate the effect of social class on achievement.

Information relevant to the social and economic conditions within the grade nine attendance areas of schools was derived from statistics contained in the 1961 Census Tracts for the City of Edmonton. The statistics used to determine the socio-economic status of the schools' patrons were those pertaining to (1) maximum level of working force education, (2) categories of male occupations, (3) median family wage, and (4) median value of owner occupied dwellings within the grade nine boundary area of each school. While certain differences among these measures were evident, it was assumed that the magnitude of these differences would not detract from the thesis that the grade nine school population was representative of the broad-middle-class stratum of the community.



### Analysis of the Data

The analyses of the data involved descriptive and statistical techniques. The biographical information supplied by the principal and teacher respondents was examined in a descriptive manner as were the types of staff social interaction measured by the OCDQ.

The testing of the hypotheses utilized two statistical methods. The schools were arranged in meaningful Climate and subtest groupings and analysis of variance (one-way classification) was used to test the significance between achievement means. The second statistical technique used to test the hypotheses was the Spearman Rank Test. This statistic was employed to test the significance of correlations between achievement and Climate and subtest rankings, respectively.

### The Results: The Descriptive Analysis of the Data

The descriptive analysis of the data pertaining to the biographical characteristics of schools' staffs indicated a general lack of homogeneity among the eight schools. A wide range in distribution in numbers of teachers, male-female ratio, age, experience in education, years at their present school, and years of training was noted. In this study, no attempt was made to relate these variables to organizational climate and achievement data. This portion of the data was







reported merely to indicate the nature of the sample studied.

The analysis of the Organizational Climate data provided an insight into the social interaction within each of the eight schools. It was noted, that for some schools, the subtest loadings were grossly incongruous with their Climate classification.

### The Results: The Relationship Between Achievement and Organizational Climate

The hypothesis that academic achievement is not related to the Organizational Climate of a school was accepted by the analysis of variance treatment of the data. Also accepted by the same analysis was the hypothesis concerning the lack of relationships between achievement and the respective OCDQ subtests. Hence, the acceptance of both Hypothesis 1 and Hypothesis 2 indicated that, for this sample, the type of interaction among staff members in their school environment was not a significant factor in predicting academic achievement.

The Spearman rank test of association between school achievement and Organizational Climate ranking also accepted Hypothesis 1. There was no statistically significant correlation between school achievement and Climate rankings.

However, the testing of Hypothesis 2 by the Spearman



Rank method yielded a statistically significant correlation between school achievement ranking and the OCDQ Intimacy and Aloofness subtests respectively. The achievement-Intimacy correlation of  $+.667$  and the achievement-Aloofness correlation of  $-.690$  were indicative of a significant association at the  $.05$  level of confidence. Higher levels of student achievement were associated in a positive direction with higher levels of Intimacy and in a negative direction with higher levels of Aloofness.

Thus, in the case of two OCDQ subtests, Hypothesis 2 was rejected by the rank correlation treatment of the data. It was acknowledged that any conclusions concerning these relationships should be interpreted in the light of the apparent ambiguity of the results.

## II. CONCLUSIONS

The analyses of data indicate that student achievement is neither statistically related nor associated with the global concept of Organizational Climate. It must be stressed that, in formulating this conclusion, the investigator is adhering to the operational definitions of achievement and organizational climate. The fact that the results, in this respect, support the findings of other investigations with similar focus reinforces the observation that the OCDQ





Climate classifications have little meaning in relation to the achievement criterion.

Although the global concept of organizational climate shows no significant relationship to school achievement level, the subtest components measuring Intimacy and Aloofness do evidence a significant association with the achievement criterion. However, any conclusions drawn from this relationship must be regarded with reservation in view of the questions raised earlier in this chapter.

### III. FURTHER RESEARCH

This is the third study which has investigated the relationship between student achievement and measures of organizational climate derived from the OCDQ. The fact that the results pertaining to the relationship between achievement and the OCDQ subtest components are not entirely consistent indicates the desirability of future studies designed to test the power of these subtests as predictors of achievement.

A future study relating achievement to the OCDQ data might well incorporate in its design attention to the biographical characteristics of schools' staffs. Such factors as male-female ratio, experience in education, and years of training may be related to both the climate and achievement level of a school. Such a study might be able to ascertain



components interact to determine the final Organizational Climate classification. The following descriptive analysis is based on the behavior tapped by the eight subtest components of the OCDQ. In making these analyses the investigator was aware of the limitations of a subjective treatment of the data. An attempt has been made to describe each school in a manner consistent with descriptions of Climate types made by Halpin and Croft.<sup>3</sup> To the extent that the Halpin and Croft analyses were valid descriptions of social behavior within a school organization are the present analyses meaningful.<sup>4</sup>

#### Open Climate Schools: School C and School D

Figure 1 presents a graphic comparison of the prototypic Open Climate and the sample Open Climates on the eight subtests of the OCDQ. Examination of Figure 1 indicates that, based on a directional deviation from the mean, Schools C and D approximated the prototype on the Disengagement, Hindrance, Production Emphasis, Thrust, and Consideration subtests.

The outstanding characteristic of the social environment of School C was the high Esprit score which suggests

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<sup>3</sup>Andrew W. Halpin and Don B. Croft, The Organizational Climate of Schools (Chicago: The Midwest Administration Center, 1963), pp. 60-67.

<sup>4</sup>Cf., p. 35.







the effect of organizational climate and biographical considerations respectively on the achievement variable.

#### IV. IMPLICATIONS

Within the previously cited limitations to the findings of this study, there emerge implications for administrative behavior within a school organization.

The positive correlation between Intimacy and the achievement variable indicates that the informal organization may play a subtle, but significant, role in the attainment of goals related to productivity or achievement. This relationship suggests that teachers are motivated more by close association with their colleagues in a social-needs sense than by factors directly related to task-accomplishment. If such be the case, the school administrator should endeavour to create or maintain a school environment for his teachers which promotes a high level of social-needs satisfaction.

The negative correlation between Aloofness and the achievement variable indicates the importance of human relations on the part of the administrator in his identification with his teachers. Productivity of the school, as measured by academic achievement, is one outcome of an informal and personal relationship between the principal and his staff.



The implications of this study should be tempered by a recognition that the Intimacy and Aloofness subtests measure but two facets of organizational behavior and, as such, their role is complementary rather than independent. Although the findings of the study indicate a relationship between these subtest-measures and the achievement criterion, it is conceivable that these behaviors could be over-emphasized or emphasized in situations where they are inappropriate. It is possible that, in some schools, achievement level might be raised by decreasing Intimacy and increasing Aloofness type behavior.





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## BIBLIOGRAPHY

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## APPENDIX A

### ORGANIZATIONAL CLIMATE DESCRIPTION

#### QUESTIONNAIRE





## ORGANIZATIONAL CLIMATE DESCRIPTION QUESTIONNAIRE

	RARELY OCCURS	SOMETIMES OCCURS	OFTEN OCCURS	VERY FREQUENTLY OCCURS
1. Teachers' closest friends are other faculty members at this school.				
2. The mannerisms of teachers at this school are annoying.				
3. Teachers spend time after school with students who have individual problems.				
4. Instructions for the operation of teaching aids are available.				
5. Teachers invite other faculty members to visit them at home.				
6. There is a minority group of teachers who always oppose the majority.				
7. Extra books are available for classroom use.				
8. Sufficient time is given to prepare administrative reports.				
9. Teachers know the family background of other faculty members.				
10. Teachers exert group pressure on non-conforming faculty members.				
11. In faculty meetings, there is the feeling of "let's get things done."				
12. Administrative paper work is burdensome at this school.				



	RARELY OCCURS	SOMETIMES OCCURS	OFTEN OCCURS	VERY FREQUENTLY OCCURS
13. Teachers talk about their personal life to other faculty members.				
14. Teachers seek special favors from the principal.				
15. School supplies are readily available for use in classwork.				
16. Student progress reports require too much work.				
17. Teachers have fun socializing together during school time.				
18. Teachers interrupt other faculty members who are talking in staff meeting.				
19. Most of the teachers here accept the faults of their colleagues.				
20. Teachers have too many committee requirements.				
21. There is considerable laughter when teachers gather informally.				
22. Teachers ask nonsensical questions in faculty meetings.				
23. Custodial service is available when needed.				
24. Routine duties interfere with the job of teaching.				
25. Teachers prepare administrative reports by themselves.				





	RARELY OCCURS	SOMETIMES OCCURS	OFTEN OCCURS	VERY FREQUENTLY OCCURS
26. Teachers ramble when they talk in faculty meetings.				
27. Teachers at this school show much school spirit.				
28. The principal goes out of his way to help teachers.				
29. The principal helps teachers solve personal problems.				
30. Teachers at this school stay by themselves.				
31. The teachers accomplish their work with great vim, vigor, and pleasure.				
32. The principal sets an example by working hard himself.				
33. The principal does personal favors for teachers.				
34. Teachers eat lunch by themselves in their own classrooms.				
35. The morale of the teachers is high.				
36. The principal uses constructive criticism.				
37. The principal stays after school to help teachers finish their work.				
38. Teachers socialize together in small select groups.				



	RARELY OCCURS	SOMETIMES OCCURS	OFTEN OCCURS	VERY FREQUENTLY OCCURS
39. The principal makes all class-scheduling decisions.				
40. Teachers are contacted by the principal each day.				
41. The principal is well prepared when he speaks at school functions.				
42. The principal helps staff members settle minor differences.				
43. The principal schedules the work for the teachers.				
44. Teachers leave the grounds during school hours.				
45. The principal criticizes a specific act rather than a staff member.				
46. Teachers help select materials which will be used in the school.				
47. The principal corrects teachers' mistakes.				
48. The principal talks a great deal.				
49. The principal explains his reasons for criticism to teachers.				
50. The principal is concerned about the economic welfare of his teachers.				
51. Extra duty for teachers is posted conspicuously.				





	RARELY OCCURS	SOMETIMES OCCURS	OFTEN OCCURS	VERY FREQUENTLY OCCURS
52. The rules set by the principal are never questioned.				
53. The principal looks out for the personal welfare of teachers.				
54. School secretarial service is available for teachers' use.				
55. The principal runs the faculty meeting like a business conference.				
56. The principal is in the building before teachers arrive.				
57. Teachers work together preparing administrative reports.				
58. Faculty meetings are organized according to a tight agenda.				
59. Faculty meetings are mainly principal-report meetings.				
60. The principal tells teachers of new ideas he has run across.				
61. Teachers talk about leaving the school system.				
62. The principal checks the subject-matter ability of teachers.				
63. The principal is easy to understand.				
64. Teachers are informed of the results of a supervisor's visit.				



	RARELY OCCURS	SOMETIMES OCCURS	OFTEN OCCURS	VERY FREQUENTLY OCCURS
65. Grading practices are standardized at this school.				
66. The principal insures that teachers work to their full capacity.				
67. Teachers leave the building as soon as possible at the day's end.				
68. The principal clarifies wrong ideas a teacher might have.				
69. Schedule changes are posted conspicuously at this school.				





## APPENDIX B

PROTOTYPIC PROFILES FOR SIX ORGANIZATIONAL  
CLIMATES RANKED IN RESPECT TO  
OPENNESS VS. CLOSEDNESS



PROTOTYPIC PROFILES FOR SIX ORGANIZATIONAL CLIMATES RANKED  
IN RESPECT TO OPENNESS VS. CLOSEDNESS\*

Climates	Group's Characteristics				Leader's Characteristics			
	Disengage- ment	Hindrance	Esprit	Intimacy	Alloof- ness	Production Emphasis	Thrust	Considera- tion
Open	43	43	63	50	42	43	61	55
Autonomous	40	41	55	62	61	39	53	50
Controlled	38	57	54	40	55	63	51	45
Familiar	60	42	50	58	44	37	52	59
Paternal	65	46	45	46	38	55	51	55
Closed	62	53	38	54	55	54	41	44

\* This table is included in the original multilith publication by Andrew W. Halpin and Don B. Croft, The Organizational Climate of Schools (Washington: United States Office of Education, Department of Health, Education, and Welfare; Contract Number SAE 543-8639), p. 79.





APPENDIX C

PROFILE SIMILARITY SCORES FOR THE  
EIGHT SCHOOLS IN THE SAMPLE



PROFILE SIMILARITY SCORES FOR THE  
EIGHT SCHOOLS IN THE SAMPLE

Schools	Climate Classifications					
	Open	Autonomous	Controlled	Familiar	Paternal	Closed
A	68	99	69	86	<u>65*</u>	87
B	108	117	73	110	83	<u>59*</u>
C	<u>34*</u>	69	81	78	85	119
D	<u>63*</u>	80	94	75	80	104
E	109	90	<u>60*</u>	115	104	74
F	121	105	61	110	79	<u>59*</u>
G	91	106	120	<u>47*</u>	56	70
H	89	88	84	97	88	<u>74*</u>

\*Profile similarity score upon which Climate Classification is based.







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